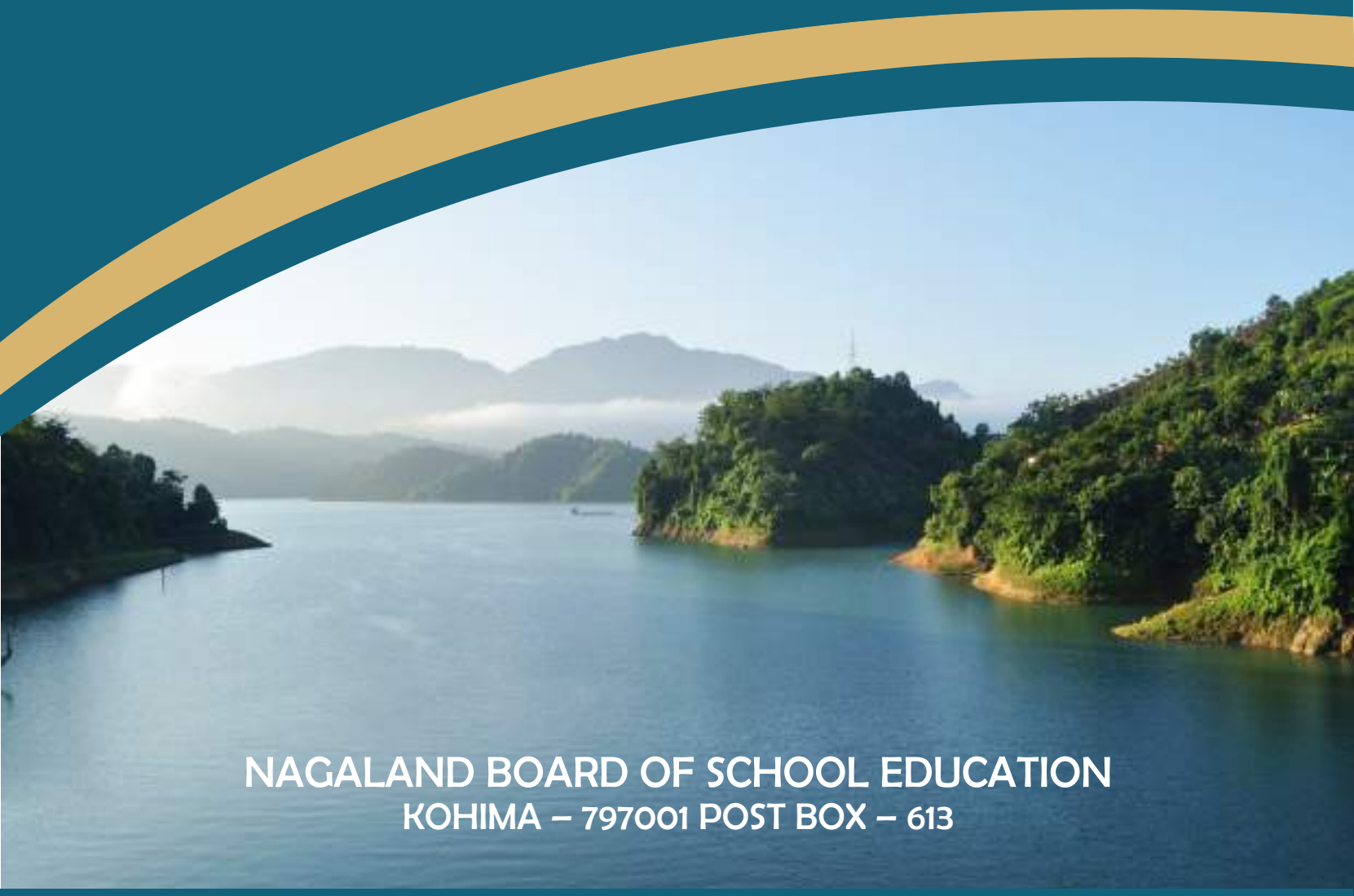
HIGHER SECONDARY SYLLABUS



NAGALAND BOARD OF SCHOOL EDUCATION
KOHIMA – 797001 POST BOX – 613

Email : nagaboard@gmail.com
Portal: https://www.nbsenl.edu.in

HIGHER SECONDARY SYLLABUS

NAGALAND BOARD OF SCHOOL EDUCATION
KOHIMA – 797001 POST BOX – 613

Email: nagaboard@gmail.com
Portal: https://www.nbsenl.edu.in

Effective from the academic session 2020 for class XI and 2021 for class XII.
The registered schools shall follow the syllabi and the textbooks prescribed by the Board.

Note: The Board reserves the right to revise the curriculum and syllabi as and when it deems necessary.

First Print - 2016
Revised Print - 2021

Published by:
Chairman,
Nagaland Board of School Education,
Kohima, Nagaland.

Printed at: N V Press, Kohima

FOREWORD

Curriculum is a cyclic process. It has to be planned, developed, implemented and evaluated in order to replan, based upon the results of evaluation, for making it more meaningful. The pupil's characteristics, community needs and expectations and the changing society have an important bearing upon the development of the curriculu

The last revision of the syllabus for higher secondary level was done in the year 2009 based on the National Curriculum Framework (NCF) 2005. The new revised syllabus was made effective from the academic session 2015 in class XI and for class XII it was effective from 2016. The revised syllabi were developed based on the guiding principles as envisaged in NCF 2005.

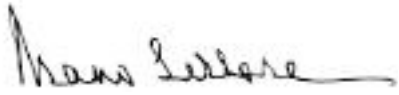
The Core syllabus for science and commerce streams (common for the whole country) which was implemented with effect from the academic session 2011 is not affected in the present revision.

The philosophy, approaches and the stand on teaching and learning as enumerated in NCF have been the basis for developing the curricular materials.

The weightage of internal/project marks has been enhanced in most of the subjects w.e.f. 2020 for Class XI and Class XII from 2021 in order to strengthened experiential learning as well as to promote learning by doing amongst the students.

All schools registered with the Board are required to strictly follow the syllabi and textbooks prescribed by the Board for the academic session and examinations concerned. No deviation is permissible.

Lastly, I express my sincere appreciation to the Officers and Teachers who have been involved in this revision exercise through the workshop mode.



Dated: 30th March 2021

(Mrs. Asano Sekhose)
Chairman.

National Curriculum Framework (NCF) 2005

The National Curriculum Framework (NCF) 2005 is the framework on the basis of which the Nagaland Board of School Education formulates its curriculum and syllabus document by adopting and adapting the guidelines provided.

The paramount guiding principles as proposed by NCF – 2005 are:

- Connecting knowledge to life outside the school
- Ensuring that learning is shifted away from rote methods
- Enriching the curriculum to provide for overall development of children rather than remain textbook centric
- Making examinations more flexible and integrated into classroom life and
- Nurturing an over-riding identity informed by caring concerns within the democratic polity of the country.

According to NCF 2005, the greatest national challenge for education is to strengthen our participatory democracy and the values enshrined in the Constitution. Meeting this challenge implies that we make quality and social justice the central theme of curriculum reform. Quality in education includes a concern for quality of life in all its dimensions.

"Education as a planned endeavour, at a personal level on a small scale or institutional level on a large scale, aims at making children capable of becoming active, responsible, productive and caring members of society. They are made familiar with the various practices of the community by imparting the relevant skills and ideas. Ideally, education is supposed to encourage the students to analyse and evaluate their experiences, to doubt, to question, to investigate-in other words, to be inquisitive and to think independently".

- NCF 2005 (Position Paper-aims of Education)

Another basic aim of education is to nurture in the learner a sound mind and strong values driven character. Learners should be educated to uphold the democratic values, respect the rules of law and support humanitarian ideals; they should engage in healthy practices to be able to develop robust and healthy physiques, learn how to think for themselves and be creative.

In principle, education is a learning progression to help learners explore their innate capacity and talents as well as develop their potential to improve and enhance sustainability of their living environment.

Learning to learn and the willingness to unlearn and relearn are important as means of responding to new situation in a flexible and creative manner. The curriculum needs to emphasise the processes of constructing knowledge.

(Adopted from NCF – 2005)

CONTENTS

I N D E X

PART – A

ELIGIBILITY OF CANDIDATES

1. Admission of students to a registered institution of the NBSE:

1.1 A student seeking admission to a class in a registered institution will be eligible for admission to that class if he:-

(i) has been studying in an institution registered with NBSE or member Board of Council of Boards of School Education in India (COBSE),

(ii) has passed qualifying or equivalent qualifying examination making him eligible for admission to that class and

(iii) produces: -

(a) Pupil Cumulative Record (PCR).

(a migrating student shall produce the School Leaving Certificate or Transfer Certificate signed by the Head of the Institution last attended and countersigned by the District Education Officer or his equivalent), and

(b) Certificate(s) in support of having passed the qualifying or equivalent qualifying examination.

Explanation: -

(a) A person who has been studying in an institution which is not a member Board of COBSE shall not be admitted to any class of the registered institutions on the basis of certificate(s) of such unrecognized institutions attended by him earlier.

(b) 'Qualifying Examination' means the passing of that examination which makes a student eligible for admission to the next higher class.

(c) 'Equivalent Examination' means an examination conducted by a recognised Board/ University and is recognised by NBSE as equivalent to the corresponding examination conducted by this Board.

1.2 No person who is under the sentence of rustication or is expelled from any Board/ University/School or is debarred from appearing in the examination for whatever reason by any Board/University shall be admitted to any class nor shall be permitted to appear at any examination under NBSE.

1.3 No student shall be admitted or promoted to any subsequent higher class unless he has completed the regular course of study of the class to which he was admitted at the beginning of the academic session and has passed the examination at the end of the concerned academic session, qualifying him for promotion to the next higher class.

1.4 No student shall be admitted in Class XI or above in an institution registered with the Board after the specified date.

The candidate shall complete the required percentage of attendance (80%) for each class to make him eligible for the examinations.

1.5 Admission: Specific Requirements

Admission to Class XI in a registered institution shall be given only to such a student who has passed: -

The High School Leaving Certificate Examination (Class X) conducted by this Board or an equivalent examination conducted by a member Board of COBSE and recognised by this Board as equivalent to its High School Leaving Certificate Examination.

1.6 Admission to Class XII

(i) Admission to Class XII **shall be given to students who:**

- has completed a regular course of study for Class XI, and
- has passed Class XI examination from an institution registered with NBSE.

(ii) Admission to migrating students to Class XII **is not allowed.**

However, the Chairman shall have the authority to decide direct admission to Class XII on special circumstances.

2. Admission to Examinations

2.1 Admission to Examinations: Regular Candidate

Regular candidates will be allowed to appear the Higher Secondary School Leaving Certificate Examination who had submitted their duly completed applications for admission to the concerned examination, and/or his name in the manner prescribed by the Board, along with the prescribed fee forwarded to the Controller of Examinations by the Head of the Institution.

2.2 Management of Examinations

(i) It is mandatory for an institution registered with the Board to follow the rules and guidelines of the Management of Examinations of the Board.

(ii) No registered institution shall endeavor to present the candidates who are not enrolled as on 1st July nor will it present the candidates of its unregistered institutions to any of the Board's Examinations.

(iii) If the Board has reasons to believe that a registered institution is not following the Board's rules and norms, the Board will resort to penalties as deemed fit.

2.3 A Regular course of Study

(i) The expression "a regular course of study" means at least 80% of attendance in the classes held, counted from the day of commencing/teaching of Class XI / XII, up to the 1st of the month preceding the month in which the examination of the Institution/Board commences.

Candidates taking up a subject(s) involving practicals shall also be required to have at least 80% of the total attendance for practical work in the subject in the laboratory.

Heads of institutions shall not allow a candidate who has opted subject(s) involving practicals to take the practical examination(s) unless candidate fulfill the attendance requirements as given in this Rule.

(ii) The candidates who had failed in the same examination in the preceding year and who rejoins Class XI/ XII shall be required to put in 80% of attendance calculated from the 1st of the month following the publication of the result of that examination by the Institution/Board up to the 1st of the month preceding the month in which the examination of the Institution/Board commences.

2.4 Requirement of attendance in subjects of Internal Assessment

(i) No student from a registered institution shall be eligible to take the examination unless he has completed 80% of attendance counted from the opening of Class XI / XII up to the 1st of the month preceding the month in which the examination of the Institution/Board commences in the subjects of internal assessment.

(ii) The Chairman, NBSE shall have powers to condone shortage of attendance in subjects of internal assessment.

2.5 Rules for Condonation of shortage of attendance

(i) Shortage of attendance up to 15% only may be condoned by the Chairman, NBSE. Cases of candidates with attendance below 65% in Class XII shall be considered for condonation of shortage of attendance by the Chairman only in exceptional circumstances created on medical grounds, such as candidates suffering from serious diseases like Cancer, AIDS, T.B. or any other disease or injury requiring long period of hospitalization.

(ii) The head of registered institution shall refer a case of shortage within the above prescribed limit of condonation to the Board, either with the recommendations or with valid reasons for not recommending the case.

(iii) The following may be considered valid reasons for recommending the cases of the candidates with attendance less than the prescribed percentage:

(a) prolonged illness;

(b) loss of parents/legal guardian or some other such incident leading to his absence from the school and meriting special considerations;

(c) any other reason of similar serious nature; and

(d) authorized participation and/or representation of the State in sponsored Tournaments, Sports Meets, Seminars, Exhibitions, etc. of not less than inter school level, NCC, Scouts & Guides and NSS Camps, etc. within or outside the state. The days of journey for such participation shall be counted as full attendance.

2.6 Detention of eligible candidates

The Heads of the registered institutions can detain candidates from appearing the examination of the Board on account of any of the following reasons:

(i) if there is no sign of academic improvement or if the student has a deteriorating performance in the weekly/monthly tests and terminal examinations.

(ii) gross misconduct and insubordination to the institutional authority.

(iii) failure to attend coaching classes.

(iv) non-payment of fees (school fees, examination fees, etc.).

(v) failure to abide by the rules of the institution.

(vi) or any other reason which the head of the institution necessitates to take an action.

2.7. Admission to Examinations : Private Candidates

(i) A candidate who had failed at the Higher Secondary School Leaving Certificate Examination of the Board will be eligible to reappear at a subsequent examination as a private candidate. However, if the syllabus & textbooks are changed/revised, he shall have to appear in the current course and NOT the old course.

(ii) Private candidates shall not be allowed to opt/appear a subject (even if the subject is one of the subjects for the said examination) which he has not taken or studied as a regular student.

(iii) Those regular candidates who have failed at the Class XI Promotion Examination of the NBSE or any other member Board of COBSE shall not be permitted to appear the Higher Secondary School Leaving Certificate Examination as private candidates.

2.8 General

A candidate who has been expelled or is under punishment or rustication or is debarred for appearing in or taking an examination for any reason whatsoever by this Board or any member Board of the COBSE, shall not be permitted to appear the Higher Secondary School Leaving Certificate Examination as private candidates.

PART - B

1. SCHEME OF STUDIES

There shall be 3 (three) streams i.e. Arts, Commerce and Science at the higher secondary level. There will be 6 (six) external subjects including 1 (one) additional subject and 3 (three) internally assessed subjects. **The additional subject is optional.**

The subjects to be taught in the different streams are as follows:

1.1 Subjects.

The subject of studies at the higher secondary level shall be as follows:

A. ARTS

I. *Compulsory*

(I) English

II. *Elective (**any four**):*

(I)	History	(ii)	Political science	(iii)	Economics
(iv)	MIL or Alt. English	(v)	Psychology	(vi)	Philosophy
(vii)	Sociology	(viii)	Geography	(ix)	Education
(x)	Music	(xi)	Financial Markets Management		
(xii)	Computer Science	(xiii)	Informatics Practices	(xiv)	Vocational Subject

III. *Internally Assessed Subjects*:

(i) Environmental Education (ii) Work and Art Education
(iii) Physical and Health Education

IV. *Additional subject:*

A subject given in serial no. II (Elective) which is not opted as an Elective with conditions.

Note: (1) Students cannot opt the following subjects together:

(a) Education and Psychology
(b) Computer Science and Informatics Practices.

(2) A candidate can also offer an additional subject from the given elective subjects but subject to fulfilment of the condition laid down in note no. 1 above

B. COMMERCE

I. *Compulsory*

(i) English (ii) Economics (iii) Accountancy (iv) Business Studies

II. *Elective (**any one**):*

(i)	Mathematics	(ii)	Entrepreneurship
(iii)	Fundamentals of Business Mathematics	(iv)	Financial Markets Management
(v)	Computer Science	(vi)	MIL or Alt. English
(vii)	Informatics Practices	(viii)	Vocational Subject

III. *Internally Assessed Subjects*:

(i) Environmental Education (ii) Work and Art Education,
(iii) Physical and Health Education.

IV. *Additional subject:*

A subject given in serial no. II (Elective) which is not opted as an Elective with conditions.

Note: (1) Students cannot opt the following subjects together:

Computer Science and Informatics Practices.

(2) A candidate can also be offered an additional subject from the given elective subjects but subject to fulfilment of the condition laid down in note no. 1 above.

C. SCIENCE

I. *Compulsory*

(i) English (ii) Physics (iii) Chemistry

II. *Elective (**any two**):*

(i) Biology ii) Mathematics (iii) Computer Science

(iv) Informatics Practices. (v) MIL or Alternative English (vi) Vocational Subject

III. *Internally Assessed Subjects*:

i) Environmental Education ii) Work and Art Education

iii) Physical and Health Education

IV. *Additional subject:*

A subject given in serial no. II (Elective) which is not opted as an Elective with conditions.

Note: (1) Students cannot opt Computer Science and Informatics Practices subjects together:

(2) A candidate can also offer an additional subject from the given elective subjects but subject to fulfillment of the condition laid down in note no. 1 above

1.2 Instructional Time and Instructional Period:

- There should be a minimum of 180 working days in a year.
- The duration of each period should be 45 minutes.
- The instructional period should be distributed to ensure that the whole syllabus is transacted.
- The institutions while planning its instructional time should provide time for project works and out door activities.

1.3 Medium of Instruction:

The medium of instruction and examination for all subjects shall be English except for the Major Indian Languages and Modern Indian Languages (MILs).

1.4 Selection of a particular scheme of studies:

It is desired that the students choose their elective subjects keeping in view their future course of higher studies. Institution shall therefore be responsible for ensuring the correct selection of subjects to meet the university or professional requirements of a student(s).

2. SCHEME OF EXAMINATIONS:

2.1. Nature of Examination :

The pattern of higher secondary examinations shall be as follows:-

(a) Class XI

The examination shall be conducted from the syllabus of Class XI.

I.
- The date and time of the examinations shall be fixed by the Board.
- The The question papers shall be set by the Board.
- The evaluation and provisional result shall be done by the institution.

- The declaration of result by the institution shall be done after it is approved by the Board through the Portal.
- The following valued answer-scripts of all the subjects shall be submitted to the Board personally or by post:
    - 3(three) scripts within 0-32% marks
    - 3(three) scripts within 33-60% marks
    - 3(three) scripts within 61-100% marks

For Environmental Education 2 (two) scripts for each grade shall be submitted.

ii.
- The internal subjects i.e., Work and Art Education, Physical and Health Education and Environmental Education shall be assessed internally by the institutions on a five point grade scale.
- The grades of the internally assessed subjects shall be entered using NBSE Offline Software and upload it in the Portal.
- These grades shall be taken into consideration in deciding the result.
- The institutions shall maintain the achievement record or progress of the students in the Pupil Cumulative Record (PCR).
- These records are subject to scrutiny by the Board.

iii. Details of subjects, marks and duration of examination:

a. External Subjects:

Subject	*Marks*	*Duration*
• Subject with practical		
Theory	70	3 hours
Practical	30	3 hours
• Subject with internal/project work		
Theory	80	3 hours
Internal/project work	20	

b. Internally assessed subjects

These subjects shall be continuously and comprehensively evaluated by the institution. The performance of the student shall be given in grades.

(b) Class XII (Higher Secondary School Leaving Certificate Examination)

i)
- The Board shall conduct the final examination of Class XII as Higher Secondary School Leaving Certificate Examination (HSSLC).
- The examination shall be based on the syllabus for Class XII and the result shall be determined on the basis of the marks obtained at the HSSLC Examination.

ii) Details of subject, marks and duration of examination:

a. External Subjects:

Subject	*Marks*	*Duration*
• Subject with practical		
Theory	70	3 hours
Practical	30	3 hours
• Subject with internal/project work		
Theory	80	3 hours
Internal/project work	20	

b. Internally assessed subjects:

These subjects shall be continuously and comprehensively evaluated by the institution.

- The performance of the student shall be given in grades.
- The grades of the internally assessed subjects shall be entered in the Mark List of HSSLC Practical Examination/ Internal Assessment.
- These grades shall be taken into account to determine the result and rank.

2.2 Pass criteria and classification of successful candidate:

i) **The pass criteria for the examinations of Classes XI and XII shall be as follows:**

- 27 marks and 6 marks separately in subject having 80 external and 20 internal/ project work
- 21 marks in theory and 12 marks in practical separately for those subjects involving practical including the subject Environmental Education.
- 165 marks in the aggregate out of 500 marks.

ii) For promotion to the next higher class, a candidate must pass in 5 (five) subjects which includes the compulsory subjects.

iii) **Classification of result is:-**
III division 165 to 224 marks
II division 225 to 299 marks
I division 300 and above

iv) The rank and division of a successful candidate shall be decided on the basis of best 5 (five) subjects. This is subject to having passed the compulsory subjects as per the scheme of studies for each respective stream.

3. MINIMUM ATTENDANCE FOR CLASSES XI AND XII:

A student pursuing a regular course must have 80% or above class attendance to his/her credit in order to sit for the promotion or final examination.

4. REGISTRATION:

A student who had enrolled in the higher secondary classes under this Board shall register himself/herself with the Board by applying in the prescribed form.

Registered students shall be issued a registration card.

Students who are not registered with the Board will not be allowed to sit at the Board's examinations.

5. RULE FOR ADMISSION TO EXAMINATION:

i) A student who opted an elective subject but did not appear in that particular subject but got promoted to Class XII with other 5 (five) subjects shall not be allowed to take up that subject in Class XII.

ii) A student who did not appear the theory paper of an elective subject but appeared the practical or vice-versa shall not be allowed to continue to take up that elective subject in Class XII.

iii) A student who appeared the theory paper of an elective subject (not having practicals) or both the theory paper and practical but failed shall be allowed to take up that elective subject in Class XII.

6. CHANGE OF SUBJECT:

A student, after passing Class XI, shall be allowed to change his/her subject only with the prior approval of the Board in the following subjects:

(i) MILs to Alternative English ii) Psychology to Education (iii) Computer Science to Informatics Practices.

For such cases, approval shall be sought on or before 30th April of the academic year.

7. CHANGE OF STREAM:

The provision of change of stream is applicable for the failed candidate(s) of HSSLC Examination. Such a candidate shall seek prior permission from the Board to join in Class XI.

Failed candidates of Class XI are eligible for change of stream. Such candidates shall seek prior permission from the Board for change of stream before taking admission.

8. REGISTRATION OF SUBJECT:

Institutions shall obtain prior permission from the Board for registration for the subjects prescribed in the syllabus to be taught.

Institutions shall not forward candidates to the examinations in subjects for which they are not registered. Such cases shall be rejected.

9. VOCATIONAL SUBJECT:

Physical verification shall be done by the Board before permission is granted to an institution to introduce vocational subject.

PART – C

AREAS OF INTERNAL ASSESSMENT

As per the scheme of studies given for higher secondary level, the following areas are for internal assessment to be done by the respective institutions.

1. Environmental Education
2. Work and Art Education
3. Physical and Health Education.

The purpose of assigning these areas to internal assessment is that these should not be reduced to mere certification but should received careful handling so as to encourage growth of the student into a more wholesome personality.

The academic achievement should be fully supplemented with growth in other areas of human personality which is far more worthwhile in dealing with the life situations.

Therefore, the evaluation shall be done on continuous and comprehensive basis. The evaluation of internal assessment subjects mentioned above should be done on a five point grade scale as stated below:

Grade A	-	Most indicators in a skill	75% to 100%
Grade B	-	Many indicators in a skill	60% to 74%
Grade C	-	Some indicators in a skill	45% to 59%
Grade D	-	Very less indicators in a skill	33% to 44%
Grade E	-	No indicators identifiable in a skill	32% and below

In all the three internally assessed subjects, a student must secure the minimum qualifying grade 'D' to be promoted or declared passed.

Students with failed grades should not be sent up for final examination.

PART –D
ENGLISH

General Objectives:

- To read, listen and comprehend a variety of topics.
- To develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose.
- To respond, participate in group discussions, interviews etc.
- To identify the central / main points and supporting details on given topics.
- To promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc, through meaningful activities.
- To develop ability and knowledge required in order to engage in independent reflection and enquiry.
- To be able to write in response to questions or task based like essay, letters, applications, notice, reports, preparing c. v., filling forms, etc.
- To be able to refer dictionaries or any academic reference material.
- To develop the ability to be original and creative and make notes based on the given text.
- To contextualise a given topic.
- To personally respond, appreciate and analyse literary text.
- To develop the art of formal public speaking.
- To be able to make notes from various resources for the purpose of developing the extracted ideas into sustained pieces of writing.

DESIGN OF QUESTION PAPER
CLASS - XI
ENGLISH

Weightage to different forms of questions:

Sl.no.	Forms of questions	Mark allotment for each question	No. of questions	Total marks
1.	VSA-I (grammar)	1	10	10
2.	VSA -II	2	5	10
3.	SA- I	3	2	6
4.	SA- II	4	3	12
5.	LA- I	5	6	30
6.	LA- II	6	2	12
	Total		**28**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	25
2.	Average	50	40
3.	Difficult	20	15
	Total	**100**	**80**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA - I	1 word	2 minutes	20 minutes
2.	VSA - II	20-25 words	3 minutes	15 minutes
3.	SA- I	30-35 words	6 minutes	12 minutes
4.	SA- II	40-60 words	7 minutes	28 minutes
5.	LA- I	60-100 words	10 minutes	60 minutes
6.	LA- II	100-150 words	15 minutes	30 minutes
	Reading of question & Revision	-	-	15 minutes
			Total Time	**180 minutes**

Scheme of Options:

There will be no general option. However, an internal option shall be provided for:

i. 1 (one) 3 marks question
ii. 1 (one) 4 marks question
iii. 4 (four) 5 marks questions

CLASS –XI
ENGLISH

Unit-Wise weightage

Part - A: External **Time: 3 hrs** **Marks:80**

Unit		Marks
I.	**LITERATURE** a) Prose b) Poetry c) Drama	**30**
II.	**Long Reading Text**	**10**
III.	**Reading**	**15**
IV.	**Writing**	**15**
V.	**Grammar**	**10**
	Total	**80**
Part – B: Internal		**20**
I.	**Formal Testing**	**5**
II.	**Assignment**	**5**
III.	**Listening**	**5**
IV.	**Speaking**	**5**
	Total	**20**
	Grand total	**100**

CONTENTS

1.	THANK YOU M'AM	:	LANGSTON HUGHES
2.	NO MEN ARE FOREIGN	:	JAMES KIRKUP
3.	THE MALEFACTOR	:	ANTON CHEKHOV
4.	IF	:	RUDYARD KIPLING
5.	THE DIAMOND MAKER	:	H. G. WELLS
6.	WHY CAN'T A WOMAN BE MORE LIKE A MAN?	:	(FROM PYGMALION – GEORGE BERNARD SHAW)
7.	THE VERGER	:	W. SOMERSET MAUGHAM
8.	A HUNGER FOR BOOKS	:	DORIS LESSING

9.	KELHOUKEVIRA	:	EASTERINE KIRE
10.	THE IMPORTANCE OF BEING EARNEST	:	OSCAR WILDE
11.	SWAMI AND FRIENDS (LONG READING TEXT)	:	R.K. NARAYAN

Part - A: External **80 Marks**

Unit 1: Literature **40 marks /70 periods**

Literature:

* There will be five short answer type questions on prose to be answered in 30 – 40 words which will test comprehension of localized items in the text, it will also test general language competence and will in turn build confidence with dealing longer answers.

  2 marks each.

* There will be one long answer type question on prose for 5 marks with an internal option, to facilitate the development of prediction skills leading towards global comprehension (100- 150 words).
* There will be two references to context questions with internal options to assess critical understanding of the poems for 3 marks each. There can be two or more parts to each question. Students will be expected to answer questions on commonly used poetic devices such as (Personification, simile, alliteration, metaphor, onomatopoeia hyperbole, transferred epithet, rhyme, rhythm, imaginary)
* One learner's response task on the main theme / poet's perception of the poem.

  4 marks (80 – 120 words)

* There will be reference to context questions from drama based on the learner's understanding of character and events. (5 marks)
* There will be two long answer type questions with options on Long Reading Text (Novel) to test the analysis of themes / plots / events/ characters etc. 5 marks each (100 – 150 words).

Unit II: Reading **15marks/30 periods**

This section will assess Reading Comprehension. The section will be of 15 marks and will have 3 reading passages of 6, 5 and 4 marks followed by questions that will test the sub skills of scanning, skimming, inference evaluation and comprehension. There can be questions to test vocabulary also. The passages will be extracts from poems / factual /literary / discursive or descriptive passages.

* The passages will be in about 200 – 300 words and the other shorter one of about 120 – 150 words.

Unit III: Writing **15 marks /30 periods**

* One short writing items about 50 words like a notice, invitation and posters for 4 marks.
* One writing item in about 150 – 200 words for 5 marks, e.g. an essay, diary entry, report.
* One letter for 6 marks e.g. letter to the editor or informal letter.

Unit IV: Grammar **10 marks /30 periods**

This section will assess grammar items in context for 10 marks. There can be 4 – 5 questions in this section which will test grammar items.

* Direct / Indirect Speech
* Voice
* Adjective and adverb clauses.

Part - B: Internal **20 Marks /20 Periods**

a)	Formal Testing	5 marks
b)	Assignment	5 marks
c)	Listening	5 marks
d)	Speaking	5 marks

1. Listening and Speaking: The testing of Listening and Speaking Skills will be conducted by the schools/colleges internally. The question paper will be for 10 marks.

   The listening and speaking examination should be conducted with no amount of pre-conditioned impressions of students. Schools should take this examination seriously and adhere to the principles of testing completely.

Assessment scale

The speaking and listening test shall be assessed on a 5 Band Scale. The assessment shall be done or given basing on the fulfilment of the criteria indicated against the respective Band Point.

Speaking

Many tasks can be set. The teacher has a choice to test the learner for 5 marks. The teacher can choose any task based on the learners competency.

Band Points	**Criteria**
5	a) Quite fluent b) Uses accurate and appropriate structure and vocabulary c) Occasional grammatical errors d) Intelligible in terms of pronunciation and accent e) Requires no effort by the listener
4	a) Fluent b) Short utterances c) Some slips in grammar and vocabulary d) Intelligible e) Some pauses f) Requires only a little effort by the listener
3	a) Lacks fluency in the sense that some hesitations, false starts and reformulations b) Manages to communicate with some effort c) Lacks accuracy, some errors in grammar and vocabulary d) Needs quite a bit of support/prompting
2	a) Makes basic mistakes in pronunciation, shows little control of grammar and vocabulary b) Lots of pauses, routinised/memorized sentences c) Repetition, requires a lot of effort by the listener d) Needs lot of prompting
1	a) Very little or hardly any evidence of making any s ense b) Single words which are repetitions of what the examiner said c) Lot of hesitation d) More non verbal than verbal utterances
0	Is silent in spite of examiner's effort. Achieves no communication

Listening:

One listening task shall be set for 5 marks to assess the listening skills. They could focus on:

* Listening for comprehension
* Listening for specific information
* Predictive Listening
* Inferential Listening

The following Band Point Scale is to be used to assess the Listening Skills.

Band Points	**Criteria**
5	a) Meaningful chunks are well represented b) No spelling mistakes c) No relevant words missing d) Has no difficulty in understanding the spoken language
4	a) Small bits of meaningful chunks fairly correct b) Some spelling slips c) Some irrelevant words missing d) Can understand the language even when it is not clearly structured
3	a) Small bits of meaningful chunks not present b) Some spelling errors c) Some words missed out d) Can understand fully well when the topic is familiar
2	a) Large bits of meaningful chunks not present b) Some spelling errors which change the meaning of the piece of communication c) Many words missed out d) Can understand fully well when the topic is familiar e) Can understand at least 2 main points
1	a) Some chunks from the input exis t but these are not the meaningful ones b) Many unacceptable spelling errors for the age c) Completely lacks sense d) Can understand familiar utterances but can't make sense of the meaning behind it
0	Is unable to even process the input

* **Common European Framework of Reference for Languages: learning, teaching assessment.**

Prescribed textbooks:

1. ***Literature Reader Class XI*** – ***Madhubun Educational Books***
2. ***Main Course Book Class XI*** – ***Madhubun Educational Books***
3. ***Swami and Friends*** – ***by R. K. Narayan***

DESIGN OF QUESTION PAPER
CLASS - XII
ENGLISH

Weightage to different forms of questions:

Sl.no.	Forms of questions	Mark allotment for each question	No. of questions	Total marks
1.	VSA-I (grammar)	1	10	10
2.	VSA -II	2	5	10
3.	SA- I	3	2	6
4.	SA- II	4	2	8
5.	LA- I	5	5	25
6.	LA- II	6	1	6
7.	LA- III	7	1	7
8.	LA -IV	8	1	8
	Total		**27**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	25
2.	Average	50	40
3.	Difficult	20	15
	Total	**100**	**80**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA - I	1 word	2 minutes	20 minutes
2.	VSA- II	20-25 words	2 minutes	10 minutes
3.	SA- I	30-35 words	5 minutes	10 minutes
4.	SA- II	40-60 words	6 minutes	12 minutes
5.	LA- I	60-100 words	11 minutes	55 minutes
6.	LA- II	100-150 words	15 minutes	15 minutes
	LA- III	150-200 words	18 minutes	18 minutes
	LA - IV	As per marks above	25 minutes	25 minutes
	Reading of question & Revision	-	-	15 minutes
			Total Time	**180 minutes**

Scheme of Options:

There will be no general option. However, an internal option shall be provided for:

i. 1 (one) 3 marks question

ii. 3 (three) 5 marks questions

iii. 1 (one) 4 marks question

CLASS-XII
ENGLISH

Unit-Wise weightage
Part - A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
I.	**LITERATURE** a) Prose b) Poetry c) Drama	30
II.	**Long Reading Text**	10
III.	**Reading**	15
IV.	**Writing**	15
V.	**Grammar**	10
	Total	**80**
Part – B: Internal		**20**
I.	**Formal Testing**	5
II.	**Assignment**	5
III.	**Listening**	5
IV.	**Speaking**	5
	Grand total	**100**

Part - A: External **80 Marks /180 Periods**

Unit 1: Literature **40 marks /70 periods**

* There will be five short answer type questions on prose to be answered in 30 – 40 words which will test comprehension of localized items in the text, it will also test general language competence and will in turn build confidence with dealing longer answers. 2 marks each.

* There will be one long answer type question on prose for 5 marks with an internal option, to facilitate the development of prediction skills leading towards global comprehension (100-150 words).

* There will be two reference to context with internal options to assess critical understanding of the poems for 3 marks each. There can be two or more parts to each question. Students will be expected to answer questions on commonly used poetic devices such as:

  Personification, simile, alliteration, metaphor, onomatopoeia, hyperbole, transferred epithet, rhyme, rhythm, imaginary and repetition.

* There will be one learner's response task on the main theme / poet's perception of the poem (80 – 120 words) 4 marks.

* There will be reference to context questions from drama based on the learner's understanding of character and events. (5 marks)

* There will be two long answer type questions with options on long Reading Text (Novel) to test the analysis of themes / plots / events / character etc. (100 – 150 words) 5 marks each

CONTENTS

1.	A PIECE OF BREAD	:	FRANCOIS COPPEE
2.	LET ME NOT TO THE MARRIAGE OF TRUE MINDS	:	WILLIAM SHAKESPEARE
3.	A VOICE FOR FREEDOM	:	ELLEN JOHNSON SIRLEAF
4.	PRAYER BEFORE BIRTH	:	LOUIS MACNIECE
5.	SUNSHINE SUSAN	:	DEEPA KIRAN
6.	SPRING AND FALL	:	GERARD MANLEY HOPKINS
7.	THE RANSOM OF THE RED CHIEF	:	O. HENRY
8.	SELF MEASURE IN THE MAKING OF BRILLIANT LEADERS	:	
9.	CHARGE OF THE LIGHT BRIGADE	:	ALFRED LORD TENNYSON
10.	MARK ANTONY'S SPEECH (From Julius Caesar)	:	WILLIAM SHAKESPEARE
11.	Long Reading Text The Canterville Ghost	:	Oscar Wilde

Unit II: Reading **15 marks/30 periods**

This section will assess reading comprehension. The section will be of 15 marks. There will be two reading passages.

* the first passage (which can be of 600 - 700 words) will be followed by questions that will test the sub skills of reading – scanning, skimming, and also the various comprehension level – literal, inferential, evaluative and analytical. There will be questions to test vocabulary also. These passages could be factual / discursive / literal. A poem could also be included. This passage will be assessed for 8 marks.
* The second passage will be for note-making and summarizing. This passage can be of about 400 words. The students will make notes of the passage which will be for 4 marks and develop the notes into a summary which will be for 3 marks. Total marks - 7

Unit III: Writing **15 marks /30 periods**

1. There will be one short writing task in about 50 words for 4 marks. This can comprise anyone of the following items:

* advertisement / filling forms / messages / expressing opinions.

2. There will be one writing task in about 150 – 200 words for 5 marks which may include anyone of the following:

* speech/article/newspaper report.

3. There will be one letter writing task for 6 marks. This could be:

* a covering letter for job application with resume.
* business letter.

Unit IV: Grammar **10 marks /30 periods**

This section will assess grammar items in context for 10 marks. There can be 4 to 5 questions in this section which will test grammar items.

* Tense
* Modal Auxiliaries
* Idioms & phrases

Part - B: Internal **20 Marks /20 Periods**

i.	Formal Testing	5
ii.	Assignment	5
iii.	Listening	5
iv.	Speaking	5

Listening and Speaking: The testing of Listening and Speaking Skills will be conducted internally by the schools/colleges.

The listening and speaking examination should be conducted with no amount of pre-conditioned impressions of students. Schools should take this examination seriously and adhere to the principles of testing completely.

Assessment scale

The speaking and listening shall be assessed on a 5 Band Scale. The assessment shall be done or given basing on the fulfillment of the criteria indicated against the respective Band Point.

Speaking

Many tasks can be set. The teacher has a choice to test the learner for 5 marks. The teacher can choose any task based on the learners competency.

Band Points	Criteria
5	a) Quite fluent b) Uses accurate and appropriate structure and vocabulary c) Occasional grammatical errors d) Intelligible in terms of pronunciation and accent e) Requires no effort by the listener
4	a) Fluent b) Short utterances c) Some slips in grammar and vocabulary d) Intelligible e) Some pauses f) Requires only a little effort by the listener
3	a) Lacks fluency in the sense that some hesitations, false starts and reformulations b) Manages to communicate with some effort c) Lacks accuracy, some errors in grammar and vocabulary d) Needs quite a bit of support/prompting
2	a) Makes basic mistakes in pronunciation, shows little control of grammar and vocabulary b) Lots of pauses, routinized/memorized sentences c) Repetition, requires a lot of effort by the listener d) Needs lot of prompting
1	a) Very little or hardly any evidence of making any sense b) Single words which are repetitions o f what the examiner said c) Lot of hesitation d) More non verbal than verbal utterances
0	Is silent inspite of examiner's effort. Achieves no communication

Explanation: *Fluency* refers to using language in connected speech.
Accuracy refers to grammatical and phonological functions of the language

Listening:

One listening task shall be set for 5 marks to assess the listening skills. They could focus on:

* Listening for comprehension
* Listening for specific information
* Predictive Listening
* Inferential Listening

The following Band Point Scale is to be used to assess the Listening Skills.

Band Points	**Criteria**
5	a) Meaningful chunks are well represented b) No spelling mistakes c) No relevant words missing d) Has no difficulty in understanding the spoken language
4	a) Small bits of meaningful chunks fairly correct b) Some spelling slips c) Some irrelevant words missing d) Can understand the language even when it is not clearly structured
3	a) Small bits of meaningful chunks not present b) Some spelling errors c) Some words missed out d) Can understand fully well when the topic is familar
2	a) Large bits of meaningful chunks not present b) Some spelling errors which change the meaning of the piece of communication c) Many words missed out d) Can understand fully well when the topic is familiar e) Can understand at least 2 main points
1	a) Some chunks from the input exist, these are not the meaningful ones b) Many unacceptable spelling errors for the age c) Completely lacks sense d) Can understand familiar utterances but can't make sense of the meaning behind it
0	Is unable to even process the input

* **Common European Framework of Reference for Languages: learning, teaching assessment.**

Prescribed textbooks:

1. ***Literature Reader Class XII*** - ***Madhubun Educational Books***
2. ***Main Course Book Class XII*** - ***Madhubun Educational Books***
3. ***The Canterville Ghost*** - ***by Oscar Wilde***

ALTERNATIVE ENGLISH

Objectives:

- To provide extensive exposure to diverse genres of writings in English by authors and poets of different countries.
- To respect pluralism of cultures and views, and be a critical, reflective and independent thinker.
- To update, enrich and extend their knowledge in a global sense through literary and creative uses of language
- To inculcate reading with comprehension and enrich their vocabulary
- To enable student to competently apply functional grammar
- To assimilate and process information through meaningful interactive tasks
- To promote measurable performance for enhancing students' life-long learning capability

DESIGN OF QUESTION PAPER
ALTERNATIVE ENGLISH

Weightage to different forms of questions:

Sl. no.	Forms of Questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	12	12
2.	SA - I	2	5	10
3.	SA - II	3	4	12
4.	SA - III	4	4	16
5.	LA - I	5	4	20
6.	LA - II	10	1	10
	Total		**30**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	25
2.	Average	50	40
3.	Difficult	20	15
	Total	**100**	**80**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl. no.	Forms of questions	Expected length of answer	Expected time for each question	Total expected time
1.	VSA	10-15 words	2 minutes	24 minutes
2.	SA-I	20-25words	3 minutes	15 minutes
3.	SA-II	40-50 words	6 minutes	24 minutes
4.	SA-III	80-100 words	8 minutes	32 minutes
5.	LA-I	120-150 words	10 minutes	40 minutes
6.	LA-II	200-250 words	30 minutes	30 minutes
	Reading of question and Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of Options:

There will be no general option. However, an internal option shall be provided for:

i. 1 (one) 4 marks question

ii. 4 (four) 5 marks questions

CLASS - XI
ALTERNATIVE ENGLISH

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
I.	Prose	20
II.	Poetry	15
III.	Drama	10
IV.	Fiction	15
V.	Grammar	10
VI.	Reading	10
	Total	**80**
Part – B: Internal		**20**
	Assignment Seminar Group Activity Class - tests	
	Grand total	**100**

Unit I: Prose **20 marks/40 periods**

i.	The letter A	Christy Brown
ii.	The Luncheon	William Somerset Maugham
iii.	After Bhopal	Harsh Mander
iv.	Dream Children	Charles Lamb
v.	The Fly	Katherine Mansfield

Unit II: Poetry **15 marks/35 periods**

i.	The Slave's Dream	H. W. Longfellow
ii.	Mending Wall	Robert Frost
iii.	Money madness	D. H. Lawrence
iv.	She Walks in Beauty	Lord Byron

Unit III: Drama **10 marks/20 periods**

Ever Young -Alice Gerstenberg

Unit IV: Fiction **15 marks/30 periods**

Lord of the Flies - William Golding

Unit V: Grammar **10 marks/15 periods**

i. Verbs
ii. Adverbs
iii. Tenses

Unit VI: Reading **10marks/15 periods**

Reading an unseen passage or a poem

Part – A: External **80 Marks**

Literature **60 marks/125 periods**

The literature texts will help the students in recalling, reasoning, appreciating literary conventions, illustrating with relevant quotations from the texts, giving opinions and justifying, inferring, analyzing, evaluating, creativity and fluency

Grammar **10 marks/15 periods**

This section will assess and refresh grammar items on verbs, adverbs and tenses for 10 marks. The continuity of related items will help the learners grasp its functionality along with its outcomes .In addition, awareness of proper usages of grammar in real-life context can aid them in schooling and aftermath as well.

Reading **10marks/15 periods**

An unseen passage or a poem (200-300 words) will be followed by questions that will comprehensively test the sub-skills of reading- scanning, skimming, inferential, evaluative and analytical. There can be questions to test vocabulary also.

Part – B: Internal
Internal assessment **20 marks/25 periods**

Internal assessment will be evaluated by the concerned teacher on varied learning process like seminars, assignments, internal-tests and group activities. This section will comprehensively provide instructional sessions for students to enhance clarity of pronunciation, using appropriate language conventions and addressing participants using appropriate titles and overall fluency.

Prescribed textbooks:

1. ***Alternative English Class XI*** – **K12 Publishing and Printing Solutions LLP**
2. ***Lord of the Flies*** – ***by William Golding***

CLASS-XII
ALTERNATIVE ENGLISH

Unit-Wise weightage
Part - A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
I.	Prose	20
II.	Poetry	15
III.	Drama	10
IV.	Fiction	15
V.	Grammar	10
VI.	Reading	10
	Total	**80**
Part – B: Internal		20
	Assignment	
	Seminar	
	Group Activity	
	Class - tests	
	Grand total	**100**

Unit I: Prose **20 marks/40 periods**

i.	Letter to my daughter	-	Jawaharlal Nehru
ii.	Knowledge and wisdom	-	Bertrand Russell
iii.	Of followers and friends	-	Francis Bacon
iv.	The last Lesson	-	Alphonse Daudet

Unit II: Poetry **15 marks/35 periods**

i.	All the world's a stage	-	William Shakespeare
ii.	Death be not proud	-	John Donne
iii.	My Last Duchess	-	Robert Browning
iv.	Indian Weavers	-	Sarojini Naidu

Unit III: Drama **10 marks/20 periods**

The boy comes home - A. A. Milne

Unit IV: Fiction **15 marks/30 periods**

Great Expectations - Charles Dickens

Unit V: Grammar **10 marks/15 periods**

i. Prepositions
ii. Conjunctions
iii. Common errors

Unit VI: Reading **10 marks/15 periods**

Reading an unseen passage or a poem

Part – A: External **80 Marks**

Literature **60 marks/125 periods**

The literature texts will help the students in recalling, reasoning, appreciating literary conventions, illustrating with relevant quotations from the texts, giving opinions and justifying, inferring, analyzing, evaluating, creativity and fluency.

Grammar **10 marks/15 periods**

This section will assess and refresh grammar items on conjunction, preposition and common errors in grammar. The continuity of related items will help the learners grasp its functionality along with its outcomes .In addition, awareness of proper usages of grammar in real-life context can aid them in schooling and aftermath as well.

Reading **10marks/15 periods**

An unseen passage or a poem (200-300 words) will be followed by questions that will comprehensively test the sub-skills of reading- scanning, skimming, inferential, evaluative and analytical. There can be questions of test vocabulary also.

Part – B: Internal

Internal assessment **20 marks/25 periods**

Internal assessment will be evaluated by the concerned teacher on varied learning process like seminars, assignments, internal-tests and group activities. This section will comprehensively provide instructional sessions for students to enhance clarity of pronunciation, using appropriate language conventions and addressing participants using appropriate titles and overall fluency.

Prescribed textbooks:

i. Alternative English Class XII : Madhubun Educational Books

ii. Great Expectations : Charles Dickens

MAJOR/MODERN INDIAN LANGUAGES (MILs)

Unit-Wise weightage
Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	**20**
Grand Total	**100**

DESIGN OF QUESTION PAPER

Weightage to different forms of questions

Section	Details of Topics/Sections	Types of questions	No. of questions	Marks	Total Marks
Section A– Reading	One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.	LA-III	1	1x10=10	10
Section B– Writing	**Writing**	LA- II SA- III	1 1	1x6=6 1x4=4	10
Section C– Grammar	**Grammar** **Translation**	VSA SA- II	12 1	12x1=12 1x3=3	15
Section D– Literature	**Prose**	VSA SA- I SA- II SA- III LA- I	1 2 2 1 1	1x1=1 2x2=4 2x3=6 1x4=4 1x5=5	20
	Poetry	VSA SA- I SA- II SA- III LA- I	1 1 1 1 1	1x1=1 1x2=2 1x3=3 1x4=4 1x5=5	15
	Fiction	SA- I SA- II LA-I	1 1 1	1x2=2 1x3=3 1x5=5	10

Sl.no.	Forms of Questions	Marks for each question	No. of Questions	Total marks
1.	VSA	1	14	14
2.	SA - I	2	4	8
3.	SA - II	3	5	15
4.	SA - III	4	3	12
5.	LA - I	5	3	15
6.	LA - II	6	1	6
7.	LA - III	10	1	10
	TOTAL		**31**	**80**

Weightage level of questions

Sl.no	Level	Percentage	Marks
1.	Easy	20	16
2.	Average	65	52
3.	Difficult	15	12

Expected time for writing answer

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA	10-15 words	2 minutes	28 minutes
2.	SA- I	20-25 words	4 minutes	16 minutes
3.	SA- II	40-50 words	6 minutes	30 minutes
4.	SA- III	60-90 words	8 minutes	24 minutes
5.	LA- I	100-150 words	10 minutes	30 minutes
6.	LA- II	160-190 words	15 minutes	15 minutes
7.	LA- III	200-250 words	22 minutes	22 minutes
	Reading of question paper and Revision	-	-	15 minutes
			Total time	**180 minutes**

MODERN INDIAN LANGUAGE: AO

Objectives:

- Asen tetsü taso oshiji shitak angateta, züngtettsü, zülutettsü aser jempitettsü.
- Takum nung pei kin sobaliba aser awashi angazüka benshitsü.
- Asen Ao oshi Arrla shitak wazüka ayutsü asoshi.

CLASS - XI
MODERN INDIAN LANGUAGE: AO

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	**20**
Grand Total	**100**

Part – A : External **80 Marks/180 periods**

SECTION A – READING **10 marks/10 periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

1. Leplashi
2. Yange
3. Apakijem
4. Jilajitep
5. O Meyipzük(Translation)

SECTION D– LITERATURE

Prose: **20 marks/45 periods**

1. Pentochepchep Ritsüng (Chapter 1-5)
2. Aor Lokti Puti Rajem, Vol II, Chapter 2,4,5,8

Poetry: **15 marks/45 periods**

1. Ku Lima Nungtem
2. Takar Ka Mangzür
3. Sungpu Ungerkong Penzü
4. Nagaland 1956

Fiction: **10 marks/35 periods**

Apu Ka Ajanger – T. Senka

PART B: Internal **20 Marks**

1. Conversation skills 10 marks
2. Assignments 5 marks
3. Formal testing 5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Akümlir Mongsong (Tebhong Ana)*** – ***ASLB Publications, 2008***
2. ***Orrlem Aser Olem by M.L. Wati*** – ***ASLB Publications, 2007***
3. ***Pentochepchep Ritsüng by W. Chubanungba*** – ***ASLB Revised Edition, 2008***
4. ***Apu Ka Ajanger by T. Senka.***
5. ***Aor Lokti Puti Rajem, Tebhong Ana Shilem II by A. Lanunungsang*** – ***ASLB Publications, 2007***

CLASS-XII
MODERN INDIAN LANGUAGE : AO

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	20
Grand Total	**100**

PART - A : EXTERNAL **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay (objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Rasem Aser Ralok
2. Temesüktep Olasü ojang Sadangyim
3. Oyim Jinutepyim
4. Mapanglem
5. Ojisa Inyakyim
6. Translation

SECTION D– LITERATURE

Prose: **20 Marks/45 Periods**

1. Akümlir Mungsang

a. Tar nunger Otsü – A. Lanunungsang
b. Shikiraka – I. Temjen Tzüdir
c. Talenba – T. Senka

2. Aor Lokti Puti Rajem, Vol II, Chapter 9-14

Poetry: **15 Marks/45 Periods**

1. Longtrok
2. Takar Aser Tsüktem Moluk
3. Kinü Lima
4. Nokinketer Ajakbo Meshilang

Fiction: **10 Marks/35 Periods**

Jina Etiben

PART B: INTERNAL **20 Marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Akümlir Mongsong Tebhong Ana, Vol II*** – ***ASLB Publications, 2008***
2. ***Orrlem Aser Olem*** – ***ASLB Publications, 2007***
   M.L. Wati
3. ***Aor Lokti Puti Rajem, Tebhong Ana Shilem II*** – ***ASLB Publications, 2007***
   A. Lanunungsang,
4. ***Jina Etiben, Revised Edition, MSM***

MODERN INDIAN LANGUAGE: SÜMI (SÜTSAH)

Objectives:

- Mütsümisshei atsah yehluh eno philuh kepu gholah lono qophenni keu.
- Kiphimmiqqo pelo atsah ithi keu lono akighithi allau ithulupe nikeu.
- Ni likhi ni zza tsah achipi lono pih keppu gholah lono qophenni keu.
- Atsah pih kelo inikiviu lono pih penni keu.
- Ni likkhi ni mheshomheghi, eno atsah gihuluh penni keu.
- Shiyeh kütau tsah ssümo no ni tsah likkhi akütssa shi peitha no atsah pihnni keu.
- Akiyyethi 'ü' peitha akeu meküa ithipenni keu.
- Atsah kuthoh akivishi ithi penni keu.
- Akiyye, akippi eno akipphi aqha no peitha akeu gholah ithipenni keu.
- Atsah lono alikhi juh michi mütsümisshei ithipenni keu.
- Atsah meküa ithi penni keu.

CLASS - XI
MODERN INDIAN LANGUAGE: SÜMI (SÜTSAH)

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A	– READING	10
SECTION B	– WRITING	10
SECTION C	– GRAMMAR	15
SECTION D	– LITERATURE	
	1. PROSE	20
	2. POETRY	15
	3. FICTION	10
	Total	**80**
Part – B: Internal		**20**
	Grand Total	**100**

Part - A: External **80 marks/180 Periods**

SECTION A – READING **10 marks/10 periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

1. Thiungo (Preposition)
2. Atsajoh Kikijje (Classification of sentences)
3. Sülekuthoh (Idioms and phrases)
4. Pekibide (Translation)

SECTION D– LITERATURE

Prose(Kughakicheh): **20 marks/45 periods**

1. Nagami Phuthekuwo
2. Amüghüssü
3. Khakhu Eno Sheyili
4. Achineh
5. Külakupuh

Poetry (Leshe): **15 marks/45 periods**

1. Visheli No Lli Zza Shikipilli
2. Ammu Kikinni Losüleh
3. Kunolike
4. Qethapu
5. Ashihamih Leh

Fiction (Lotsüh Kiyye): **10 marks/35 periods**

Akimtthe Ghüzü-u Ghili (Pilgrim's Progress)
Translated by Rev. Najekhu Yeptho

Part – B: Internal **20 marks**

1. Conversation skills 10 marks
2. Assignments 5 marks
3. Formal testing 5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Kughakiche Eno Xülhe - Lozhevi Sema***
2. ***Apuh- Assü Leshe - Compiled by S.V. Sheyepu***
3. ***Sümi Tsayeh - I. Lozhevi Sema***
4. ***Akimtthe Ghüzü-u Ghili (Pilgrim's Progress)***
   Translated by Rev. Najekhu Yeptho

CLASS-XII
MODERN INDIAN LANGUAGE : SÜMI (SÜTSAH)

Unit-Wise weightage
Part 'A' External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
Part – B: Internal	20
Grand Total	**100**

PART - A : EXTERNAL **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay (objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Balhah Qüiqqü Shikithe kütsüh (Correction of common errors)
2. Sülekuthoh (Idioms and Phrases)
3. Jeshe (Adjective)
4. Pekibide (Translation)

SECTION D– LITERATURE

Prose(Kügha kicheh): **20 Marks/45 Periods**

1. Akhuayeh kivi, abo-akke Küxxü Eno Atthü Kuchuh
2. Nagami Yeghi Lo Khristo Yehkuluh Ikighi
3. Joymoti Eno Godadhar
4. Gen. Kaito Sükhai
5. Kalalishi

Poetry (Leshe): **15 Marks/45 Periods**

1. Tüghünakha
2. Viyishe Naghutomi
3. Azüküzü Kinnhi
4. Hevishe Amighiu
5. Anulikishimi Leh

Fiction (Lotsüh Kiyye): **10 Marks/35 Periods**

Lhophekitthekütsüu (The Alchemist) Translated by Kaholi V. Chishi

PART B: INTERNAL **20 Marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1.	***Kughakiche Eno Xülhe***	–	***I. Lozhevi Sema***
2.	***Apuh- Assü Leshe***	–	***Compiled by S.V. Sheyepu***
3.	***Sümi Tsayeh***	–	***I. Lozhevi Sema***
4.	***Lhophekitthekütsüu (The Alchemist) Translated by Kaholi V. Chishi***		

MODERN INDIAN LANGUAGE: LOTHA

Objectives:

- Pyimtsümotsüe epensü elani kikyoniro tsütsata ero jiang ntsi khitokvü tsükona.
- Nkolo eramoren jiang jo kvüto vanta rocho sana hojiang eran motsü yakchia ntsijantokvü tsükona.
- Eranto elani oyinsan lo nzanchitokvü tsükona.
- Yinsan thampoe yitsüng üngatheo jiang ntsüngrünga engathetokvü tsükona.
- Pyimtsümotsüe tssolanphyolan ümmhom elio jiang pemphia wotokvü tsükona.
- Metapoe motsü mono ümmhom jiang engathe nonghori jiang ekhaeyan ümmhonkata wotokvü tsükona.

CLASS - XI
MODERN INDIAN LANGUAGE: LOTHA

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	**20**
Grand total	**100**

Part - A : External **80 Marks/180 Periods**

SECTION A – READING **10 marks/10 Periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

Zonkayi, Shüklashüktüng ronri, Myingtsayi, Myingthong, Etsyukayi, Yishen, Tssoyio yi jiang, Yirenthong tona Erhüyi to jiang, Yitsüng motsünga tssosi yichak elüm elio jiang, Echakyi. (Translation)

SECTION D– LITERATURE

Prose(Motsüran Ekhao): **20 marks/45 periods**

1. Nrii nchyua tona Potsow loroe nchyua to motsü
2. Mali loroe motsü
3. Samson tona Delilah to motsü
4. Zitüngziri lo Ozen
5. Kyong epensü tona Oki eli tsütsailan

Poetry (Chungiyi): **15 marks/45 periods**

1. Sükhying sosi tsata
2. Yantsae
3. Shantiwoe miphong
4. Ümmhorü
5. Elhi lo lüm theta

Fiction (Motsüro): **10 marks/35 periods**

Arilao motsü

Part – B: Internal **20 marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1.	***Kyong Ekhao Ekhürhycho XI & XII***	**–**	***Kyong Academy***
2.	***Kyong Chungiyi***	**–**	***Kyong Academy***
3.	***Kyong Yinsanlan (Kyong Grammar)***	**-**	***K.R. Murry***
4.	***Outline Grammar of the Lotha Naga Language***	**-**	***Rev. Dr. W.E. Witter***
5.	***Arilao Motsü***		

CLASS-XII
MODERN INDIAN LANGUAGE : LOTHA

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A	– READING	10
SECTION B	– WRITING	10
SECTION C	– GRAMMAR	15
SECTION D	– LITERATURE	
1. PROSE		20
2. POETRY		15
3. FICTION		10
	Total	**80**
Part – B: Internal		20
	Grand Total	**100**

PART - A : EXTERNAL **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay (objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Yirenji, Yintüp jiang, mhachungyi, etümtokyi, tongphiyio, phyocholan, eyieton, ovonji, yiyutsüng, yitsüng echümpo tssosi yichak esütao jiang, oyi saying jiang, yitsünga tae tsütsao yi jiang.
2. Yikhophi (Translation)

SECTION D– LITERATURE

Prose (Motsüran Ekhao): **20 Marks/45 Periods**

1. Hümchipili motsü
2. Sir Ronald Ross
3. Donphen emyumü ji cheka ji
4. Ruth motsü
5. Kyong loji longa ta tona, yanpiyanthan to tssota erowo ji.

Poetry (Chungiyi): **15 Marks/45 Periods**

1. Loroe Kangtsücho merangcho
2. Janchoünzoe
3. Naga liphong yanchecho
4. Yihata etssaji eman
5. Randan teriv

Fiction (Motsüro): **10 Marks/35 Periods**

Epoe Nchyua na echü echung eloe soa evamo Ji

PART B: INTERNAL **20 Marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. Kyong Ekhao Ekhürhycho 12 & 11	–	***Kyong Academy***
2. Kyong Chungiyi	–	***Kyong Academy***
3. Kyong Yinsanlan (Kyong Grammar)	-	***K.R. Murry***
4. Outline Grammar of the Lotha Naga Language	-	***Rev. Dr. W.E. Witter***
5. Epoe Nchyua na echü echung eloe soa evamo Ji		

MODERN INDIAN LANGUAGE: TENYIDIE

Objectives:

- Kephrümia bu u diemvüko phrü mu si pevilieketuo la.
- Puotei rüdikezhü ki ze kephrümia bu diemvü puo kru tou-u phrü morokesuo la.
- Kephrümia mhasi thau chü kemeya mu chü kehie morokesuo la.
- Kekramia Diemvü rei si pevilieketuo la.
- Leshükephrümia mu kepethamia bu kepero pevi di u dieu chü kehielieketuo la.
- Nagamia seyie krotho dze silieketuo la.

CLASS - XI
MODERN INDIAN LANGUAGE: TENYIDIE

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A	– READING	10
SECTION B	– WRITING	10
SECTION C	– GRAMMAR	15
SECTION D	– LITERATURE	
	1. PROSE	20
	2. POETRY	15
	3. FICTION	10
	Total	**80**
Part – B: Internal		**20**
	Grand total	**100**

PART – A : External **80 Marks/180 marks**

SECTION A – READING **10 marks/10 periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

1. Diezho kikruko mu puo zatseko
2. Translation

SECTION D– LITERATURE

Prose: **20 marks/45 periods**

1. Kediu Oedipus
2. N Keneiu Zotuo
3. Doctor Faustus
4. Mha Ketso Seiyakezha Thepfunuoyo

Poetry: **15 marks/45 periods**

1. Khe Peziyaluo
2. Leshükephrüyo
3. N Ba Nunu N Nei Kedalie
4. Rheichie Khrüprei
5. Themia Kelhou
6. A Kelhou Nu

Fiction: **10 marks/35 periods**

A Tsüre Rügukelieu – Thepfukhrietuo (Khrietuo) Rüpreo

PART – B: Internal **20 marks**

1.	Conversation Skills	10 marks
2.	Asssignment	5 marks
3.	Formal Testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Kelhou Dzevi – Ura Academy Publication, Kohima by D. Kuolie***
2. ***Diezho Mu Kezo Mhathu – Ura Academy Publication (Grammar & Composition, Revised edition, 2016) by Mhienirielie Vakha***
3. ***A Tsüre Rügukelieu – Ura Academy Publication. by Thepfukhrietuo (Khrietuo) Rüpreo***

CLASS-XII
MODERN INDIAN LANGUAGE : TENYIDIE

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
Part – B: Internal	20
Grand Total	**100**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay(objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Diezho kikru puo shie puo nyie mu kethuzhoko
2. Translation

SECTION D– LITERATURE

Prose: **20 Marks/45 Periods**

1. Hai Di Lhou Vo Zotuo Me
2. Tenyimia Krütapeyu: A Sie Petie Lakeshü
3. Tenyimia Vitho Mu Sonyi
4. Kemengukecü Dieyie Thelau

Poetry: **15 Marks/45 Periods**

1. Kenei Kekra Ki Ketho Yopuo Vi
2. Kekhriethoko
3. A Mhi Pie Kengu
4. Nhamenyiepounuo
5. Thenupfü kelhou
6. Kelhoumhasi

Fiction: **10 Marks/35 Periods**

Kepenuopfü U Se Ba – Kekhrievoü Yhome

PART B: INTERNAL **20 Marks**

1. Conversation Skills 10 marks
2. Asssignment 5 marks
3. Formal Testing 5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances indigenous to the tribe may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Miavimia Rüli – Ura Academy Publication by D. Kuolie***
2. ***Diezho Mu Kezo Mhathu – Ura Academy Publication (Grammar & Composition, Revised edition, 2016)) by Mhienirielie Vakha,***
3. ***Kepenuopfü U Se Ba – Ura Academy Publication by Kekhrievoü Yhome***

MAJOR INDIAN LANGUAGE: BENGALI

Objectives:

- To develop the abilities of listening and reading with comprehension.
- To develop the abilities of oral and written expression.
- To enable the students to read independently for knowledge and recreation.
- To develop the abilities of using language more correctly, accurately and effectively.
- To enable the students to understand the structure of the language and to analyse it.
- To enrich the vocabulary of the students and to enable them to use it more effectively.
- To enable them to appreciate literature of the language.
- To develop their aesthetics sense, originality, imagination and creativity.
- To sublimate their feelings and emotions through the studies of the literature of the language and
- To develop in them the feelings of belongingness to the language-literature and culture.

CLASS - XI
MAJOR INDIAN LANGUAGE: BENGALI

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	**20**
Grand total	**100**

Part – A : External **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

1. Karak
2. Sandhi
3. Bagdhara
4. Anubad (Translation)

SECTION D– LITERATURE

Prose: **20 marks/45 periods**

1.	Anadhikar Prabesh	–	Rabindranath Tagore
2.	Chander Pahad	–	Bibhutibhusan Bandhopadhay
3.	Finlandey	–	Amiyo Chakraborty
4.	Duryog, Sajagata O Byabasthapana	–	Pannalal Goswami

Poetry: **15 marks/45 periods**

1.	Ballolila	–	Jadabendra
2.	Atmabilap	–	Madhusudan Datta
3.	Dharai Devata Chahi	–	Kamini Roy
4.	Atharo Bachar Bayas	–	Sukanta Bhattacharya

Fiction: **10 marks/35 periods**

	Srikanta (Pratham Khanda)	–	Sarat Chandra Chatterjee

Part – B: Internal **20 marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, crafts, folk songs and dances may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Bangla Sahityo Chayonika for Class XI – Assam Higher Secondary Council***
2. ***Srikanta (Pratham Khanda) by Sarat Chandra Chatterjee***

CLASS-XII
MAJOR INDIAN LANGUAGE : BENGALI

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A	– READING	10
SECTION B	– WRITING	10
SECTION C	– GRAMMAR	15
SECTION D	– LITERATURE	
	1. PROSE	20
	2. POETRY	15
	3. FICTION	10
	Total	**80**
PART – B: Internal		20
	Grand Total	**100**

PART - A : EXTERNAL **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay(objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Samas
2. Alankar Prakasan
3. Bagdhara
4. Anubad (Translation)

SECTION D– LITERATURE

Prose: **20 Marks/45 Periods**

1. Biral – Bankim Chandra Chattapaddhyay
2. Paresh – Saratchandra Chattapaddhyay
3. Manusher Maan – Balaichand Mukhapadhyay
4. Mulyadodh Siksha(Value Education) – Sujit Barman

Poetry: **15 Marks/45 Periods**

1.	Durbhagadesh	–	Rabindranath Tagore
2.	Samyabadi	–	Kazi Nazrul Islam
3.	Banglar Mukh Ami Dekhiyachi	–	Jibonanda Das
4.	Rupai	–	Jaseem Uddin

Fiction: **10 Marks/35 Periods**

	Srikanta (Pratham Khanda) Part 2	–	Sarat Chandra Chatterjee

PART B: INTERNAL **20 Marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, folk songs and dances may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. Bangla Sahityo Chayonika for Class XII – Assam Higher Secondary Council

2. Srikanta (Pratham Khanda) Part 2 by Sarat Chandra Chatterjee

MAJOR INDIAN LANGUAGE: HINDI

Objectives:

- Matri Bhasha ko sunane our padhane ke sath-sath bodhan ke kshamta our yogyata ka vikas karana.
- Moukhik our lekhan abhivayati ko vikasit karna.
- Samvado se gyan our manoranjan ke kshetra me atmnirbhar karna.
- Bhasha ke sudh our prabhavsali prayog karne ke kshamta ko viksit karna.
- Apni Matri Bhasha tatha uski sanrachana ke sahi rup se samjh kar uska vishlesan kar sake.
- Shabd gyan ka vridhi karna jisase unka sahi rup se prayog kar sake.
- Matri bhasha ke prati pathan-pathan ke liye protsahit karna.
- Kalatmak moulik, kalpnik our rachanatmak prabriti ko vikashit karna.
- Matri Bhasha tatha uske sahitya ke addhyayan ke dwara bhawnao our sadbhaw ka parimarjan our vikash karna.
- Matri Bhasha uski sahitya samagri our sanskriti ke prati ruche jagrit karna.

CLASS - XI
MAJOR INDIAN LANGUAGE: HINDI

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION A – READING	10
SECTION B – WRITING	10
SECTION C – GRAMMAR	15
SECTION D – LITERATURE	
1. PROSE	20
2. POETRY	15
3. FICTION	10
Total	**80**
PART – B: Internal	**20**
Grand total	**100**

Part – A : External **80 Marks/180 Periods**

SECTION A – READING **10 marks/10 periods**

One unseen passage of 300-400 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 marks/10 periods**

1. Application writing/ Speech writing
2. Advertisement/ Notice

SECTION C – GRAMMAR **15 marks/35 periods**

Grammar and Translation:

1. Sandhi
2. Samas
3. Paryaywachi Shabd
4. Muhavare
5. Ras, Chand Aur Alankar
6. Correct the sentence, related to noun, pronoun, number, gender, verb, adverb and case.
7. Anuwad (Translation)

SECTION D– LITERATURE

Prose: **20 marks/45 periods**

1.	Bhola Ram Ka Jeev	–	Hari Shankar Parsai
2.	Chief Ki Davat	–	Bishma Sahani
3.	Rajni	–	Mannu Bhandari
4.	Adhura Milan		
5.	Jamun Ka Per	–	Khrisna Chandar
6.	Galta Loha	–	Shekhar Joshi

Poetry: **15 marks/45 periods**

1.	Sakhi Aur Vani	–	Kabir Das
2.	Ve Aankhen	–	Sumitra Nandan Pant
3.	Chand Aur Kavi Evam Abhinav Manushy	–	Ram Dhari Singh Dinkar
4.	Jo Beet Gayi So Bat Gayi	–	Hari Vansh Rai Bacchan

Fiction: **10 marks/35 periods**

Gaban – Premchand

Part – B: Internal **20 marks**

1.	Conversation skills	10 marks
2.	Assignments	5 marks
3.	Formal testing	5 marks

Traditional practices such as painting, drawing, folk songs and dances may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Hindi Gyan Ganga – Nagaland Bhasha Parishad, Kohima***
2. ***Hindi Vyakaran Prakash***
3. ***Saral Hindi Vyakaran – Rastra Bhasha Prachar Parishad, Kohima by S. K. Pathak & Zakienei Angami***
4. ***Gaban - Premchand***

CLASS-XII
MAJOR INDIAN LANGUAGE : HINDI

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A	– READING	10
SECTION B	– WRITING	10
SECTION C	– GRAMMAR	15
SECTION D	– LITERATURE	
	1. PROSE	20
	2. POETRY	15
	3. FICTION	10
	Total	**80**
PART – B: INTERNAL		20
	Grand Total	**100**

PART - A : EXTERNAL **80 Marks/180 Periods**

SECTION A – READING **10 Marks/10 Periods**

One unseen passage of 500 words. There will be questions to test vocabulary and grammar.

SECTION B – WRITING **10 Marks/10 Periods**

1. Essay(objective)/ Dialogue
2. Copy-editing/Invitation

SECTION C – GRAMMAR **15 Marks/35 Periods**

Grammar and Translation:

1. Sandhi
2. Samas
3. Paryawachi Shabd
4. Muhavare
5. Ras
6. Chhand & Alankar
7. Anuvad (Translation)

SECTION D– LITERATURE

Prose: **20 Marks/45 Periods**

1. Poosh Kee Rat – Munshi Premchand
2. Trishanku – Munnu Bhandari
3. Bazar Darshan – Janendra Kumar

4. Sopfunuo
5. Kaalay Megha Panee Dey – Dharm Veer Bharti
6. Bahut Bara Sawal – Mohan Rakesh

Poetry: **15 Marks/45 Periods**

1. Dohawalee Avam Vinay Patrika – Tulsi Das
2. Ghar Kee Yad – Bhawanee Prasad Mishr
3. Saharsh Sweekara Hai – Gajanan Madhav Mukti Bodh
4. Patang – Alok Dhanwa

Fiction: **10 Marks/35 Periods**

Nirmala – Premchand

PART B: INTERNAL **20 Marks**

1. Conversation skills 10 marks
2. Assignments 5 marks
3. Formal testing 5 marks

Traditional practices such as painting, drawing, folk songs and dances may be assessed under assignment and conversation skills.

Prescribed textbooks:

1. ***Hindi Gyan Ganga – Nagaland Bhasha Parishad, Kohima***
2. ***Hindi Vyakaran Prakash***
3. ***Saral Hindi Vyakaran – Rastra Bhasha Prachar Parishad, Kohima by S. K. Pathak & Zakienei Angami***
4. ***Nirmala - Premchand***

POLITICAL SCIENCE

Objectives:

- Develop the skills for logical reasoning and abstraction.
- Inculcate attention to and respect for view points other than one's own.
- Introduce students to the different political thinkers in relation to a concept and in everyday social life.
- Encourage the students to analyse any unexamined prejudices that one may have inherited.
- Enable students to meaningfully participate in a concern of current political life that surrounds them.
- Enable students to understand historical processes and circumstances in which the Constitution was drafted.
- Provide opportunity for students to be familiar with the diverse visions that guided the makers of the Indian Constitution.
- Enable students to identify the certain key features of the Constitution and compare these to other constitutions in the world.
- Analyse the ways in which the provisions of the Constitution have worked in real political life.
- Enable students to be familiar with some of the key political events and figures in the post-independence period.
- Develop skills of political analysis through events and processes of recent history.
- Develop their capacity to link macro processes with micro situations and their own life.
- Encourage the students to take a historical perspective of making sense of the contemporary India.
- Enable the students to expand their horizon beyond India and make sense of the political map of contemporary world.
- Familiarise the students with some of the key political events and processes in the post cold war era.
- Equip students to be conscious of the way in which global events and processes shape our everyday lives.
- Strengthen their capacity for political analysis by thinking of contemporary developments in historic perspective.

DESIGN OF QUESTION PAPER
POLITICAL SCIENCE

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA/MCQ	1	10	10
2.	SA-I	2	6	12
3.	SA-II	4	4	16
4.	LA-I	6	3	18
5	LA-II	8	3	24
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1	VSA/MCQ	1 word/ 1 sentence	2 minute	20 minutes
2.	SA-1	30-50 words	5 minutes	30 minutes
3.	SA - II	60-100 words	7 minutes	28 minutes
4.	LA-I	150-200 words	12 minutes	36 minutes
5.	LA-II	250-300 words	17 minutes	51 minutes
	Reading question & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of options:
Questions of 6 & 8 marks will be general in option.

CLASS - XI
POLITICAL SCIENCE

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit/Chapter		Marks
Section-A: POLITICAL THEORY		
Unit I	1. Introduction to Political Theory	6
Unit II	2. Nation and State	11
	3. Citizenship	
Unit III	4. Liberty	12
	5. Equality	
	6. Justice	
Unit IV.	7. Rights	11
	8. Secularism	
	9. Peace and Development	
Section-B: INDIAN CONSTITUTION AT WORK		
Unit V.	10. Making of the Constitution	13
	11. Fundamental Rights, Duties and Directive Principles of State Policy	
	12. System of Representation	
Unit VI.	13. Executive in a Parliamentary System	11
	14. Legislature at the Central and State Level	
Unit VII.	15. Judiciary	8
	16. Federalism	
Unit VIII	17. Local Government	8
	18. Constitution as a Living Document	
	Total	**80**
Part –B: Internal - Project Work		**20**
	Grand total	**100**

Section - A: POLITICAL THEORY

UNIT - I

1. Introduction to Political Theory: 6 marks/14 periods

- Meaning of Political Science and its scope
- Political Theory and its importance
- Politics in seemingly non-political domains
- Resolving political arguments through reasoning

UNIT - II 11 marks/24 periods

2. Nation and State

- Meaning and features of nation
- Meaning and elements of State
- Self-determination

3. Citizenship

- Meaning
- Procedure to acquire citizenship in India
- Global citizenship

UNIT – III 12 marks/28 periods

4. Liberty

- Meaning and dimensions
- Safeguards for liberty
- Limitation on individual liberty

5. Equality

- Meaning and forms of equality
- Means to realize equality

6. Justice

- Meaning and kinds of justice
- Ways to secure justice

UNIT – IV 11 marks/ 24 periods

7. Rights

- Meaning and kinds of rights
- Rights and responsibilities
- Rights and claims

8. Secularism

- Meaning
- Needs of secularism in modern times

9. Peace and Development

- Meaning of peace and development
- Contemporary challenges to peace
- Relationship between peace and development

Section - B : INDIAN CONSTITUTION AT WORK

UNIT – V **13 marks/30 periods**

10. Making of the Constitution:

- Constituent Assembly
- Significance of constitution
- Sources
- Salient Features

11. Fundamental Rights, Duties and Directive Principles of State Policy:

- Meaning and significance
- Fundamental Rights enshrined in the constitution
- Directive Principles of State Policy and its implementation
- Fundamental Duties
- Distinction between Fundamental Rights and Directive Principles of State Policy

12. System of representation:

- Election system in India (First Past the Post System & Proportional Representation)
- Election Commission (Powers and functions)
- Provisions to ensure free and fair elections

UNIT – VI **11 marks/24 periods**

13. Executive in a parliamentary system:

- Meaning of executive
- Types of executive (Political and Permanent)
- Powers and functions of the President, Prime Minister, Council of Ministers, Governor, Chief Minister

14. Legislature at the central and state level:

- Formation and composition of the Parliament and the State Assemblies
- Powers of the Lok Sabha and Rajya Sabha
- Procedure of enacting laws
- Anti defection bill

UNIT – VII **8 marks/18 periods**

15. Judiciary:

- Independence of Judiciary
- Organization, power and jurisdiction of the Supreme Court and High Courts

16. Federalism:

- Meaning and features
- Conflict areas and tension in Centre-State relations
- Recommendation (Sarkaria Commission)
- Special provisions (Jammu and Kashmir and North Eastern States)

UNIT – VIII **8 marks/18 periods**

17. Local Government:

- Local government and its significance
- 73rd & 74th Amendment Acts and its implementation

18. Constitution as a living document:

- Constitution is static or dynamic
- Amendment procedure of the constitution
- Effects of the constitution on the working of the democracy

Part – B: Internal - Project Work **20 marks**

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

Distribution of Marks:

• Report Writing	-	7 marks
• Viva voce	-	3 marks
2. Formal Test	-	4 marks
3. Assignments	-	4 marks
4. Students' Internal Assessment Portfolio	-	2 marks

A minimum of **four** project work is to be done in a year in relation to the syllabus

Note: The project work is compulsory and has to be done by all students.

No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.

The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.

Prescribed textbook:

Political Science for Class XI **–** ***Arya Publishing Company***

CLASS-XII

POLITICAL SCIENCE

Unit-Wise weightage

Part – A: External Time: 3 hrs Marks: 80

Units / Chapters			Marks
SECTION A: Indian Polity			
UNIT – I	1.	Challenges of Nation Building	6
UNIT – II	2.	Party System	9
	3.	Era of One Party Dominance	
UNIT – III	4.	Politics of Planned Development	9
	5.	Crisis of Constitutional Order	
UNIT – IV	6.	Interest and Pressure Groups	10
	7.	Recent Development in Indian Politics	
UNIT – V	8.	India's External Relation	6
SECTION B: Contemporary World Politics			
UNIT – VI	9.	Cold War	10
	10.	End of Bi-polarity	
UNIT – VII	11.	US Dominance in World Politics	6
UNIT – VIII	12.	Alternative Center of Economic and Political Power	9
	13.	South Asia in the Post Cold War Era	
UNIT – IX	14.	International Organization in a Unipolar World	9
	15.	Security in Contemporary World	
UNIT – X	16.	Globalisation	6
		Total	**80**
Part – B: Internal – Project Work			**20**
		Grand total	**100**

SECTION A: Indian Polity

UNIT – I **6 marks/12periods**

1. Challenges of Nation Building

- Legacy of partition: Challenges to refugee resettlement, Kashmir problem
- Organization and re-organization of states
- Political conflicts over language

UNIT – II **9 marks/22 periods**

2. Party System:

- Evolution and features of party system in India
- Meaning and role/functions of political party
- Role of opposition party

3. Era of One-Party Dominance:

- Congress dominance in the first three general elections
- Nature of Congress dominance

UNIT – III **9 marks/22 periods**

4. Politics of planned development:

- Models of development in India
- Planning for socio-economic development- planning Commission (Functions and role), National Development Council
- Land Reforms and Green revolution

5. Crisis of constitutional order:

- Search for committed bureaucracy and judiciary
- Bihar and Gujarat movements
- Emergency – Causes and consequences
- Politics after emergency

UNIT – IV **10 marks/22 periods**

6 Interest and Pressure Groups:

- Meaning and role of pressure groups
- Mandal Commission and its implementation

7. Recent developments in Indian politics

- Participatory upsurge in 1990s
- Meaning and features of coalition politics
- Coalition politics from 1990 till date
- Increasing role of regional party in coalition politics

UNIT – V **6 marks/12 periods**

8. India's External Relations:

- Principles of Nerhu's foreign policy
- Sino-Indian War of 1962, Indo-Pakistan War of 1965 and 1971
- India's approach towards disarmament

SECTION B: Contemporary World Politics

UNIT – VI **10 marks/24 periods**

9. Cold War:

- Meaning and causes of origin
- Challenges to Bipolarity: Non Aligned Movement and New International Economic Order
- Major conflicts during Cold War Era: Korean and Cuban Crisis

10. End of Bipolarity:

- Causes for disintegration of USSR
- Post Cold War: Emergence of new states
- Shock Therapy and relevance of Non Aligned Movement

UNIT – VII **6 marks/14 periods**

11. US Dominance in World Politics:

- Growth of unilateralism: First Gulf War, response to 9/11 and global war on terrorism, invasion of Iraq
- Dominance and challenge to the US in economy and ideology
- Indo-US relation (1990 onwards)

UNIT – VIII **9 marks/20 periods**

12. Alternative Centers of Economic and Political Power:

- Rise of China as an economic power in post-Mao era
- Creation and expansion of European Union
- ASEAN

13. South Asia in the Post Cold War Era:

- What is South Asia?
- Military and democracy in Pakistan
- Democracy in Bangladesh
- Ethnic conflict and democracy in Sri Lanka
- Indo-Pak conflicts
- SAARC and SAFTA: Role and limitation

UNIT –IX **9 marks/20 periods**

14. International Organisations in a Unipolar World:

- Evolution, structure and objective relevance of UNO
- Role of New International Economic Organisations and NGOs
- Democratic and accountability as the new institution of global governance

15. Security in Contemporary World:

- Traditional and non traditional notions of security
- New sources of threats and cooperative security

UNIT –X **6 marks/12 periods**

16. Globalisation:

- Meaning, causes and circumstances leading to globalisation
- Political, economic and cultural consequences
- India and globalisation

PART B: INTERNAL **20 Marks**

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

Distribution of Marks:

- Report Writing - 7 marks
- Viva voce - 3 marks

2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

A minimum of **four** project work is to be done in a year in relation to the syllabus

Note: The project work is compulsory and has to be done by all students.

No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.

The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.

Prescribed textbook:

Class XII Political Science - Arya Publishing Company

HISTORY

Objectives:

- Effort in the higher secondary classes would be to emphasize to students that history is a critical discipline, a process of enquiry, a way of knowing about the past, rather than just a collection of facts.
- The syllabus would also enable students to relate/compare developments in different situations, analyse connections between similar processes located in different time periods, and discover the relationship between different methods of enquiry within history and the allied disciplines.
- The objective of this history course is to help develop an understanding of the importance of historical perspective in the study of modern issues and problems.
- The syllabus in class XI is organized around some major themes in the world history. The themes have been selected so as to (i) focus on some important developments in different spheres-political, social, cultural and economic,(ii) study not only the grand narratives of development-urbanization, industrialization and modernization-but also to know about the processes of displacements and marginalisation. Through the study of these themes students will acquire a sense of the wider historical processes as well as an idea of the specific debates around them.
- In class XII, the focus will shift to a detailed study of some themes in ancient, medieval and modern Indian history although the attempt is to soften the distinction between what is conventionally termed as ancient, medieval and modern. The object would be to study a set of these themes in some detail and depth rather than survey the entire chronological span of Indian history. In this sense the course will be built on the knowledge that the students have acquired in the earlier classes.
- While the themes in both these classes (XI and XII) are arranged in a broad chronological sequence, there are overlaps between them. This is intended to convey a sense that chronological divides and periodisation do not always operate in a neat fashion.

DESIGN OF QUESTION PAPER
HISTORY

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA/MCQ	1	10	10
2.	SA-I	2	6	12
3.	SA-II	4	4	16
4.	LA-I	6	2 +1(map)	18
5.	LA-II	8	3	24
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA/MCQ	1 word/ 1 sentence	2 minute	20 minutes
2.	SA-1	30-50 words	5 minutes	30 minutes
3.	SA - II	60-100 words	7 minutes	28 minutes
4.	LA-I	150-200 words	12 minutes	36 minutes
5.	LA-II	250-300 words	17 minutes	51 minutes
6.	Reading question & revision	-	-	15 minutes
7.				
			Total time	**180 minutes**

Scheme of options:
Questions of 6 & 8 marks will be general in option.

CLASS – XI
HISTORY

Unit-Wise weightage
Part – A: External **Time: 3 hrs** **Marks: 80**

Units	Marks
Section A: Early Societies 1. Introduction 2. From the beginning of time 3. Early cities	13
Section B: Empires 4. Introduction 5. An empire across three continents 6. Central Islamic lands 7. Nomadic Empires	20
Section C: Changing Traditions 8. Introduction 9. Three orders 10. Changing cultural traditions 11. Confrontation of cultures	21
Section D: Paths to Modernization 12. Introduction 13. The Industrial Revolution 14. Displacing indigenous People 15. Paths to modernization	20
16. Map work (units 1 – 15)	6
Total	**80**
Part – B: Internal (Project Work)	**20**
Grand Total	**100**

SECTION A: EARLY SOCIETIES **13 marks/32 periods**

1. Introduction

2. From the Beginning of Time

Focus: Africa, Europe till 15000 BC

(a) Views on the origin of human beings.

(b) Early societies.

(c) Historians' views on present-day hunting gathering societies.

3. Early Cities

Focus: Iraq, 3rd millennium BC

(a) Growth of towns.

(b) Nature of early urban societies.

(c) Historians' Debate on uses of writing.

SECTION B: EMPIRES **20 marks/45 periods**

4. Introduction

5. An Empire across Three Continents

Focus: Roman Empire, 27 B.C to A.D 600.

(a) Political evolution

(b) Economic expansion

(c) Religion

(d) Late Antiquity.

(e) Historians' views on the institution of Slavery.

6. Central Islamic Lands

Focus: 7th to 12th centuries

(a) Polity

(b) Economy

(c) Culture.

(d) Historians' viewpoints on the nature of the crusades.

7. Nomadic Empires

Focus: The Mongol, 13th to 14th century

(a) The nature of nomadism.

(b) Formation of empires.

(c) Conquests and relations with other states.

(d) Historians' views on nomadic societies and state formation.

SECTION C: CHANGING TRADITIONS **21 marks/45 periods**

8. Introduction

9. Three Orders

Focus: Western Europe, 13th-16th century

(a) Feudal society and economy.

(b) Formation of states.

(c) Church and Society.

(d) Historians' views on decline of feudalism.

10. Changing Cultural Traditions

Focus on Europe, 14th to 17th century.

(a) New ideas and new trends in literature and arts.

(b) Relationship with earlier ideas

(c) The contribution of West Asia.

(d) Historians' viewpoints on the validity of the notion 'European Renaissance'.

11. Confrontation of Cultures

Focus on America, 15th to 18th century.

(a) European voyages of exploration.

(b) Search for gold; enslavement, raids, extermination.

(c) Indigenous people and cultures - the Arawaks, the Aztecs, the Incas.

(d) The history of displacements.

(e) Historians' viewpoints on the slave trade.

SECTION D: PATHS TO MODERNIZATION **20 marks/48 periods**

12. Introduction

13. The Industrial Revolution

Focus on England, 18th and 19th century.

(a) Innovations and technological change

(b) Patterns of growth.

(c) Emergence of a working class.

(d) Historians' viewpoints, Debate on 'Was there an Industrial Revolution?'

14. Displacing Indigenous People

Focus on North America and Australia, I8th-20th century.

(a) European colonists in North America and Australia.

(b) Formation of white settler societies.

(c) Displacement and repression of local people.

(d) Historians' viewpoints on the impact of European settlement on indigenous population.

15. Paths to Modernization

Focus on East Asia, late 19th and 20th century.

(a) Militarization and economic growth in Japan.

(b) China and the Communist alternative.

(c) Historians' Debate on the meaning of modernization

16. Map Work on Units 1-15 **6 marks/5 periods**

Part – B: Internal – Project work **20 marks**

Project work will help students:

- To develop skill to gather data from a variety of sources, investigate diverse viewpoints and arrive at logical deductions.

- To develop skill to comprehend, analyze, interpret, evaluate historical evidence and understand the limitation of historical evidence.
- To develop 21st century managerial skills of co-ordination, self-direction and time management.
- To learn to work on diverse cultures, races, religions and lifestyles.
- To learn through constructivism-a theory based on observation and scientific study.
- To inculcate a spirit of inquiry and research.
- To communicate data in the most appropriate form using a variety of techniques.
- To provide greater opportunity for interaction and exploration.
- To understand contemporary issues in context to our past.
- To develop a global perspective and an international outlook.
- To grow into caring, sensitive individuals capable of making informed, intelligent
- and independent choices.
- To develop lasting interest in history discipline.

A. Assessment of project works:

	Areas	**Marks**
1.	Introduction	2
2.	Analysis/Explanation (data collection/ map work/pictures)	4
3.	Conclusion	2
4.	Oral presentation	2
B.	Formal Test	4
C.	Assignments	4
D.	Students' Internal Assessment Portfolio	2
	Total	**20**

Suggested project works:

- Organise field trips to historical sites
- Visit to museums/religious places/crafts centres
- Comparative studies of present day society/economy/ culture/religion with the past
- Interaction with old people/villagers on the customs and traditional practices
- Identifying and studying artefacts
- Making detail study of historical personalities

Note: *Besides the above, the suggested project works in the text book and any other which are relevant to the subject can be done.*

*Minimum of **four** project works has to be done in an academic year.*

The project work is compulsory and has to be done by all students.

The minimum pass criteria for the project work shall be 6 (six) marks out of 20 marks.

No question paper for the project work will be set by the Board. It is purely internal and the institution must include the project marks with the theory marks.

Prescribed textbook:

A textbook of History Class XI – VK Global Publications Pvt. Ltd.

CLASS–XII
HISTORY

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Units	Marks
Part-I: Themes in Indian History	**24**
1. The Story of the First Cities: Harappan Archaeology.	
2. Political and Economic History: How Inscriptions tell a story.	
3. Social Histories: Using the Mahabharata	
4. A History of Buddhism: Sanchi Stupa	
Part-II: Themes in Indian History	**24**
5. Agrarian Relations: The Ain-i- Akbari	
6. The Mughal Court: Reconstructing Histories through Chronicles	
7. New Architecture: Hampi	
8. Religious Histories: The Bhakti-Sufi Tradition	
9. Medieval Society through Travelers' accounts	
Part-III:Themes in Indian History	**26**
10. Colonialism and Rural Society: Evidence from Official Reports	
11. Representations of 1857	
12. Colonialism and Indian Towns: Town Plans and Municipal Reports	
13. Mahatma Gandhi through Contemporary Eyes	
14. Partition through Oral Sources	
15. The Making of the Constitution	
16. Map work (units 1-15)	**6**
Total	**80**
Part – B: Internal – Project Work	**20**
Grand Total	**100**

PART – I **24 Marks/45 Periods**

1. **The Story of the First Cities: Harappan Archaeology**
   Broad overview: Early urban centres.
   Story of discovery: Harappan civilization
   Excerpt: Archaeological report on a major site.
   Discussion: How it has been utilized by archaeologists/historians.

2. **Political and Economic History: How Inscriptions tell a story.**
   Broad overview: Political and economic history from the Mauryan to the Gupta period.
   Story of discovery: Inscriptions and the decipherment of the script shifts in the understanding of political and economic history.
   Excerpt: Ashokan inscription and Gupta period land grant.
   Discussion: Interpretation of inscriptions by historians.

3. **Social Histories: Using the Mahabharata**
   Broad overview: Issues in social history, including caste, class, kinship and gender.
   Story of discovery: Transmission and publications of the Mahabharata.
   Excerpt: from the Mahabharata, illustrating how it has been used by historians.
   Discussion: Other sources for reconstructing social history.

4. A History of Buddhism: Sanchi Stupa

Broad overview: (a) A brief review of religious histories of Vedic religion, Jainism, Vaisnavism, Saivism. (b) Focus on Buddhism.

Story of discovery: Sanchi stupa

Excerpt: Reproduction of sculptures from Sanchi.

Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.

PART-II **24 Marks/55 Periods**

5. Agrarian Relations: The Ain-i- Akbari

Broad overview: (a) Structure of agrarian relations in the 16th and 17th centuries.

(b) Patterns of change over the period.

Story of Discovery: Account of the compilation and translation of Ain-i-Akbari.

Excerpt: from the Ain-i-Akbari

Discussion: Ways in which historians have used the text to reconstruct history.

6. The Mughal Court: Reconstructing Histories through Chronicles

Broad overview: (a) Outline of political history 15th-17th centuries.

(b) Discussion of the Mughal court and politics.

Story of Discovery: Account of the production of court chronicles, and their subsequent translation and transmission.

Excerpts: from the Akbarnama and Padshahnama.

Discussion: Ways in which historians have used the texts to reconstruct political histories.

7. New Architecture: Hampi

Broad overview: (a) Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. (b) Relationship between architecture and the political system.

Story of Discovery: Account of how Hampi was found.

Excerpt: Visuals of buildings at Hampi

Discussion: Ways in which historians have analyzed and interpreted these structures.

8. Religious Histories: The Bhakti-Sufi Tradition

Broad overview: (a) Outline of religious developments during this period.

(b) Ideas and practices of the Bhakti-Sufi saints.

Story of Transmission: How Bhakti-Sufi compositions have been preserved.

Excerpt: Extracts from selected Bhakti-Sufi works.

Discussion: Ways in which these have been interpreted by historians.

9. Medieval Society through Travelers' Accounts

Broad overview: Outline of social and cultural life as they appear in travelers' accounts.

Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote.

Excerpts: from Alberuni, Ibn Batuta, Bernier.

Discussion: What these travel accounts can tell us and how they have been interpreted by historians.

PART - III **26Marks/70 Periods**

10. Colonialism and Rural Society: Evidence from Official Reports

Broad overview: (a) Life of zamindars, peasants and artisans in the late 18th century (b) East India Company, revenue settlements and surveys.
(c) Changes over the nineteenth century.
Story of official records: An account of why official investigations into rural societies were undertaken and the types of records and reports produced.
Excerpts: From Firminger's Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan Riots Report.
Discussion: What the official records tell and do not tell, and how they have been used by historians.

11. Representations of 1857

Broad overview: (a) The events of 1857-58.
(b) How these events were recorded and narrated.
Focus: Lucknow.
Excerpts: Pictures of 1857. Extracts from contemporary accounts.
Discussion: How the pictures of 1857 shaped British opinion of what had happened.

12. Colonialism and Indian Towns: (13)
Town Plans and Municipal Reports

Broad overview: The growth of Mumbai, Chennai, hill stations and cantonments in the 18th and 19th centuries.
Excerpts: Photographs and paintings. Plans of cities. Extract from town plan reports.
Focus on Kolkata town planning.
Discussion: How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.

13. Mahatma Gandhi through Contemporary Eyes

Broad overview: (a) The Nationalist Movement 1918 - 48.
(b) The nature of Gandhian politics and leadership.
Focus: Mahatma Gandhi in 1931.
Excerpts: Reports from English and Indian language newspapers and other contemporary writings.
Discussion: How newspapers can be a source of history.

14. Partition through Oral Sources

Broad overview: (a) The history of the 1940s.
(b) Nationalism, Communalism and Partition.
Focus: Punjab and Bengal.
Excerpts: Oral testimonies of those who experienced partition.
Discussion: Ways in which these have been analyzed to reconstruct the history of the event.

15. The Making of the Constitution

Broad overview: (a) Independence and the new nation state.
(b) The making of the Constitution.
Focus: The Constitutional Assembly debates.
Excerpts: from the debates.
Discussion: What such debates reveal and how they can be analyzed.

16. Map Work on Units 1-15 **6 marks**

Part – B: Internal (Project Work) **20 Marks**

Project work will help students:

- To develop skill to gather data from a variety of sources, investigate diverse viewpoints and arrive at logical deductions.
- To develop skill to comprehend, analyze, interpret, evaluate historical evidence and understand the limitation of historical evidence.
- To develop 21st century managerial skills of co-ordination, self-direction and time management.
- To learn to work on diverse cultures, races, religions and lifestyles.
- To learn through constructivism-a theory based on observation and scientific study.
- To inculcate a spirit of inquiry and research.
- To communicate data in the most appropriate form using a variety of techniques.
- To provide greater opportunity for interaction and exploration.
- To understand contemporary issues in context to our past.
- To develop a global perspective and an international outlook.
- To grow into caring, sensitive individuals capable of making informed, intelligent
- and independent choices.
- To develop lasting interest in history discipline.

A. Assessment of project works: **10 marks**

	Areas	**Marks**
1.	Introduction	2
2.	Analysis/Explanation (data collection/map work/pictures)	4
3.	Conclusion	2
4.	Oral presentation	2
B.	Formal Test	4
C.	Assignments	4
D.	Students' Internal Assessment Portfolio	2
	Total	**20**

Suggested project works:

- Organise field trips to historical sites
- Visit to museums/religious places/crafts centres
- Comparative studies of present day society/economy/ culture/religion with the past
- Interaction with old people/villagers on the customs and traditional practices
- Identifying and studying artefacts
- Making detail study of historical personalities

Note: ***Besides the above, the suggested project works in the text book and any other which are relevant to the subject can be done.***

Minimum of four project works has to be done in an academic year.

Prescribed textbook:

Themes in Indian History - Class XII **–** ***VK Global Publications Pvt. Ltd.***

PSYCHOLOGY

Objective:

- To develop appreciation about human behaviour and human mind in the context of learners' immediate society and environment.
- To develop in learners an appreciation of multidisciplinary nature of psychological knowledge and its application to various aspects of life.
- To enable learners to become perceptive, socially aware and self-reflective.
- To facilitate students' quest for personal growth and effectiveness, and to enable them to become responsive and responsible citizens.
- To teach the techniques of adjustment while facing life problems.
- To familiarised them with the collection of data and to give some practical training in graphical representation.

DESIGN OF QUESTION PAPER
PSYCHOLOGY

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	10	10
2.	SA-I	2	6	12
3.	SA-II	4	4	20
4.	LA-I	6	3	24
5.	LA-II	8	3	24
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA	One word/ one sentence	2 minute	20 minutes
2.	SA-1	30-50 words	5 minutes	30 minutes
3.	SA - II	60-100 words	7 minutes	28 minutes
4.	LA-I	150-200 words	12 minutes	36 minutes
5.	LA-II	250-300 words	17minutes	51 minutes
6.	Reading question & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of option:

Questions of 6 & 8 marks will be general in option.

CLASS – XI
PSYCHOLOGY

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Units		Marks
I.	What is Psychology?	10
II.	Methods of Enquiry in Psychology	10
III.	The Bases of Human Behaviour	8
IV.	Human Development	10
V.	Sensory, Attentional and Perceptual Processes	6
VI.	Learning	10
VII.	Human Memory	6
VIII.	Thinking	10
IX.	Motivation and Emotion	10
Total		**80**
Part-B: Internal- Project Work		**20**
Grand Total		**100**

Part- A: External

Chapter I: What is Psychology **10 Marks/24 periods**

What is Psychology; Understanding Mind and Behaviour; Popular Notions about the Discipline of Psychology; Evolution of Psychology; Development of Psychology in India; Branches of Psychology; Themes of Research and Applications; Psychology and other Disciplines; Psychology at Work; Psychology in Everyday Life.

Chapter II: Methods of Enquiry in Psychology **10 Marks/24 periods**

Goals of Psychological Enquiry; Nature of Psychological Data; Some Important Methods in Psychology; Analysis of Data; Limitations of Psychological Enquiry; Ethical Issues.

Chapter III: The Bases of Human Behaviour **8 Marks/12 periods**

Evolutionary Perspective; Biological and Cultural Roots; Biological Basis of Behaviour; Heredity: Genes and Behaviour; Cultural Basis: Socio-Cultural Shaping of Behaviour; Enculturation; Socialisation; Acculturation.

Chapter IV: Human Development **10 Marks/24 periods**

Meaning of Development; Factors influencing Development; Context of Development; Overview of Developmental Stages; Infancy; Childhood; Challenges of Adolescence; Adulthood and Old Age.

Chapter V: Sensory, Attentional and Perceptual Processes **6 Marks/12 periods**

Knowing the World; Nature and Varieties of Stimulus; Sense Modalities; Attentional Processes; Perceptual Processes; The Perceiver; Principles of Perceptual Organisation; Perception of Space, Depth and Distance; Perceptual Constancies; Illusions; Socio-Cultural Influences on Perception

Chapter VI: Learning **10 Marks/24 periods**

Nature of Learning; Paradigms of Learning; Classical Conditioning; Operant/Instrumental Conditioning; Observation of Learning; Cognitive learning; Verbal Learning; Concept Learning; Skill learning Transfer of Learning; Factors Facilitating Learning; The Learner: Learning Styles; Learning Disabilities; Applications of Learning Principles.

Chapter VII: Human Memory **6 Marks/12 periods**

Nature of Memory; Information Processing Approach: The Stage Model; Memory Systems: Sensory; Short-Term and Long-Term Memories; Levels of Processing; Types of Long-Term Memory; Knowledge Representation and Organisation in Memory; Memory as a Constructive Process; Nature and Causes of Forgetting; Enhancing Memory.

Chapter VIII: Thinking **10 Marks/24 periods**

Nature of Thinking; The Processes of Thinking; Problem Solving; Reasoning; Decision-Making; Nature and Process of Creative Thinking; Developing Creative Thinking; Thought and Language; Development of Language and Language Use.

Chapter IX: Motivation and Emotion **10 Marks/24 periods**

Nature of Motivation; Types of Motives; Maslow's Hierarchy of Needs; Nature of Emotions; Physiological Bases of Emotions; Cognitive Bases of Emotions; Cultural Bases of Emotions; Expression of Emotions; Managing Negative Emotions; Enhancing Positive Emotions.

Part – B: Internal – Project **20 Marks**

A. Projects, experiments, small studies etc.

The Students shall be required to undertake minimum of four projects. The project would involve the use of different methods of inquiry and related skills, related to the topics covered in the course.

a)	Reporting file including project work	**7 marks**
b)	Viva – voce	**3 marks**
B.	Formal Test	4 marks
C.	Assignments	4 marks
D.	Students' Internal Assessment Portfolio	2 marks

Note: ***The project work is compulsory and a minimum of four project works has to be done by all students.***

The minimum pass criteria for the project work shall be 6(three) marks out of 20 marks.

Recomended textbooks:

1. ***Psychology for Class XI*** – ***NCERT (Nagaland Edition) Goyal Brothers Prakashan***

CLASS – XII
PSYCHOLOGY

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Units		Marks
I.	Intelligence	8
II.	Memory and Forgetting	8
III.	Self and Personality	8
IV.	Biological bases of behaviour	6
V.	Coping with life challenges	7
VI.	Psychological disorders	8
VII.	Therapeutic approaches	8
VIII.	Language and communication	5
IX.	Psychology and social problems	7
X.	Social influence and group processes	7
XI.	Statistics in Psychology	8
	Total	**80**
Part – B: Internal (Project Work)		**20**
	Grand Total	**100**

Part – A: External

Unit - I Intelligence **8 Marks/20 periods**

Meaning of Intelligence: Theories of Intelligence – Triarchic theory, Monarchic theory, Anarchic theory, Spearman's two-factor theory, Group factor theory; Concept of IQ: Uses of intelligence test, Types of Intelligence test.

Unit - II Memory and Forgetting **8 Marks /20 periods**

Nature of memory, information processing approach, level of processing. Memory systems – Sensory memory, short-term memory, long-term memory, knowledge representation and organisation in memory, memory as a constructive process. Nature and causes of forgetting: Forgetting – causes, encoding failure, storage failure, retrieval failure, Amnesia.

Unit - III Self and Personality **8 Marks /18 periods**

Concept of self – self-esteem, self-efficacy and self-regulation. Concept of personality: Major approaches – Type approaches, Trait approaches and Psycho-dynamic approaches. Assessment of personality – Self report measures and projective measures

Unit – IV Biological bases of behaviour **6 Marks/13 periods**

Nervous system, Peripheral nervous system, Central nervous system, Endocrine system.

Unit - V Coping with life challenges **7 marks/13 periods**

Meaning of Adjustment, Nature and sources of stress, Coping with stress, factors facilitating positive health and well being.

Unit - VI Psychological disorders **8 Marks/16 periods**

Meaning of abnormal behaviour, Classification of disorders, Factors causing abnormal behaviour, Types of disorders – Anxiety disorders, Mood disorders, Schizophrenic disorders, Substances relating disorders, Behavioural disorders, Personality disorders.

Unit –VII: Therapeutic approache **8 Marks/16 periods**

Nature and process of therapy, Types of therapies – Bio-medical, Cognitive, Psycho-dynamic, Behavioural therapy; Rehabilitation of mental illness.

Unit – VIII: Language and communication **5 Marks /10 periods**

Introduction – nature of human languages, communication process, verbal and non- verbal communication, barriers to communications.

Unit -IX Psychology and social problems **7 Marks/16 periods**

Introduction, Social problems – poverty and social disadvantages, challenges for national integration, Gender discrimination, Population explosion, Importance of media and communication

Unit - X Social influence and group processes **7 Marks/16 periods**

Introduction, Nature of groups, formation of groups, types of groups, factors influencing group formation, influence of group on individual behaviour. Conformity, Compliance and Obedience, Co-operation and Competition, Leadership – Types of leadership, qualities of leadership.

Unit XI: Statistics in Psychology **8 Marks/22 periods**

What is Statistics? Measure of central tendency, graphical representation of data-bar, histogram and polygon

Part – B: Internal (Project) **20 Marks**

A. Projects, experiments, small studies etc.

The Students shall be required to undertake minimum two projects. The project would involve the use of different methods of inquiry and related skills, related to the topics covered in the course.

	a) Reporting file including project work	**7 marks**
	b) Viva – voce	**3 marks**
B.	Formal Test	4 marks
C.	Assignments	4 marks
D.	Students' Internal Assessment Portfolio	2 marks

Note: The project work is compulsory and a miniumum of four project works has to be done by all students.

The minimum pass criteria for the project work shall be 6 (six) marks out of 20 marks.

No question paper for the project work will be set by the board.

Reference textbooks:

1. ***Psychology for Class XI & XII*** – ***NCERT***
2. ***Introduction to psychology*** – ***MC Graw Hill Book Company***
3. ***Educational Psychology*** – ***Tandn Publications***
4. ***A Book of Education for Beginners*** – ***Kalyani Publishers***
5. ***Education Class XII*** – ***Frank Educational Aids Pvt. Ltd.***

PHILOSOPHY

Objectives:

This syllabus will help students in the following ways:

- Students will understand major philosophical concepts accurately.
- Students can apply their understanding of concepts in novel contexts.
- Students shall be able to argue with precision, balance and weight.
- Students shall be able to understand the formal structure of arguments and understand rules of influence.
- Students can read and think analytically, critically and empathetically.
- Students can critically assess their own commitments and ideas.
- Students speculate, in well-informed, well – supported, and plausible fashion, about what a given philosopher would say about a novel issue or problem.
- Students are able to explain why their pre-theoretical commitments heve or have not changed as a result of what they have learned in the curse, and if they have changed how they have done so.

DESIGN OF QUESTION PAPER
PHILOSOPHY

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA/MCQ	1	10	10
2.	SA-I	2	6	12
3.	SA-II	4	4	16
4.	LA-I	6	3	18
5.	LA-II	8	3	24
	Total		**30**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1	MCQ/VSA	One word/ one sentence	2 minutes	20 minutes
2.	SA-1	30-50 words	5 minutes	30 minutes
3.	SA - II	60-100 words	7 minutes	28 minutes
4.	LA-I	150-200 words	12 minutes	36 minutes
5.	LA-II	250-300 words	17 minutes	51 minutes
6.	Reading of question & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of option:

Questions of 6 & 8 marks will be general in option.

CLASS – XI
PHILOSOPHY

Unit-Wise weightage

External **Time: 3 hrs** **Marks: 80**

Units		Marks
PART A:	**SCIENTIFIC**	**40**
I	Nature and method of Induction	11
II	Observation and Experiment	9
III	Hypothesis	10
IV	Mills Method of Experimental Inquiry	10
PART B	**LOGIC**	**40**
V	The Nature and Subject matter of Logic	6
VI	The fundamental Principles of Logic	6
VII	Terms and Propositions	10
VIII	Categorical Syllogism	10
IX	Symbolic Logic	8
	Total	**80**
Internal		**20**
	Grand Total	**100**

Part A: SCIENTIFIC METHOD

Unit I: Nature and Method of Induction **11 marks/15 periods**

Scientific Induction – its marks and characteristics, Induction Improperly so called or Process simulating Induction, Induction proper, the method of Induction or the Inductive Procedure – its different steps or stages.

Unit II: Observation and Experiment **9 marks/20 periods**

Meaning and definition of observation and experiment, fallacies of observation, difference between observation and experimental, Relative advantages of observation over experiment and Relative advantages of experiment over observation.

Unit III: Hypothesis – its uses and conditions **10 marks/20 periods**

Importance of Hypothesis in Induction, Meaning and origin of Hypothesis, forms of hypothesis, conditions of a legitimate or valid hypothesis, Proof of hypothesis, uses of hypothesis.

Unit IV: Mill's Methods of Experimental Inquiry **10 marks/25 periods**

The method of Agreement.
The method of Difference.
The method of Agreement and Difference.
The method of concomitant variation.
The method of Residue.

Part B : LOGIC

Unit V : The Nature and Subject matter of Logic **6 marks/15 periods**

What is Logic? Is logic a Science or an Art? Uses of Logic, formal and material logic.

Unit VI : The Fundamental Principles of Logic **6 marks/15 periods**

Nature of the fundamental principles, the fundamental principles or the laws of thought.

Unit VII: Terms and Propositions **10 marks/25 periods**

Nature and definition of terms, Denotation and connotation of terms. Kinds of terms, analysis of logical proposition, kinds of propositions, distribution of terms.

Unit VIII: Categorical syllogism **10 marks/20 periods**

Syllogism – definition, Structure, kinds, general rules of categorical syllogism, Fallacies- four terms, illicit major, illicit minor, undistributed middle.

Unit IX: Symbolic Logic **8 marks/20 periods**

Value of using symbols in logic and symbolization.

Basic Truth Table: Tautology, contingent, contradictory.

Internal/Project **20 Marks**

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:
   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

A minimum of **four** project work is to be done in a year in relation to the syllabus

Note: The project work is compulsory and has to be done by all students.

No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.

The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.

Reference textbooks:

1. ***Inductive Logic*** - ***by Bhola Nath Roy***
2. ***Deductive Logic*** - ***by Bhola Nath Roy***
3. ***Introduction to Logic*** - ***by I. M. Copi***

CLASS – XII
PHILOSOPHY

Unit-Wise weightage

External **Time: 3 hrs** **Marks: 80**

Units		Marks
PART A:	**WESTERN PHILOSOPHY**	**35**
I	Definition and Scope of Philosophy	6
II	Theory of Knowledge	4
III	Kant's Critical Philosophy	4
IV	Realism and Idealism	5
V	Ethics	8
VI	Social Philosophy	8
PART B	**INDIAN PHILOSOPHY**	**35**
VII	Nature and Schools of Indian Philosophy	8
VIII	Buddhism	6
IX	Jainism	6
X	Advaita Vedanta,Vaisesika and Samkhya –Yoga	8
XI	Nyaya	7
PART C:	**RELIGION**	**10**
XII	Concept of religion	10
INTERNAL		**20**
	Grand Total	**100**

PART A: WESTERN PHILOSOPHY

Unit I: Definition and Scope of Philosophy. **6 marks/10 periods**

Unit II: Theory of Knowledge **4 marks/10 periods**

Rationalism and Empiricism.

Unit III: Kant's Critical Philosophy **4 marks/10 periods**

Unit IV: Realism and Idealism **5 marks/10 periods**

Unit V: Ethics **8 marks/18 periods**

- Meaning and defeinition of Ethics.
- Ethical issues: Abortion, Sucide, Cloning.

Unit VI: Social Philosophy **8 marks/18 periods**

- Nature and scope of social Philosophy and its relation to social psychology and sociology.
- The concept of social Justice.
- Value or uses of social philosophy.

PART B: INDIAN PHILOSOPHY

Unit VII: Nature and schools of Indian Philosophy **8 marks/16 periods**

- Definition of Indian Philosophy.
- Orthodox and heterodox schools.
- Brief Introduction to Bhaganad Gita.

Unit VIII: Buddhism **6 marks/11 periods**

- Four noble – truths, Eight –fold path, Theory of Dependent origination, Nirvana.

Unit IX: Jainism **6 marks/11 periods**

- Anekantavada and Syadvada.

Unit X: Advaita Vedanta,Vaisesika and Samkhya–Yoga **8 marks/31 periods**

- The nature of Atman and Brahman.
- Vaisesika Theory of padartha.
- Samkhya Theory of Prakriti and Purusa.
- Yoga Theory of eight – fold practice.

Unit XI: Nyaya **7 marks/15 periods**

- Theory of Pramana.

PART C : RELIGION

Unit XII: Concept of Religion **10 marks/20 periods**

- Meaning and definition.
- Concept of God in Christianity and Islam.
- Proofs for the existence of God; ontological, teleological, cosmological arguments.

Internal/Project **20 Marks**

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:

   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Note: The project work is compulsory and has to be done by all students.

No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.

The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.

Prescribed textbook:

1. ***An Introduction to Philosophy Class – XII*** - ***Heritage Publishing House, Dimapur***
   O. Lima Longkumer

Reference textbooks:

1. ***Introduction to Ethics*** - ***by R.N Sharma***
2. ***Outlines of Indian Philosophy*** - ***by Jagdishwar Sangal***
3. ***Introduction to General Philosophy*** - ***by Jagdishwar Sangal***
4. ***Introduction to Indian Philosophy*** – ***by S.C Chaterjee***

SOCIOLOGY

Objectives

- To enable learners to look at social reality objectively.
- To inculcate among the learners Scientific temper and ability to perceive reality.
- To introduce them to the basic concepts of Sociology that would enable them to observe and interpret social life.
- To exemplify these concepts with reference to empirical situations in India.
- To make the learners familiar with the contemporary processes of development and change.
- To build the capacity of students to understand and analyse the changes in contemporary Indian society.

DESIGN OF QUESTION PAPER
SOCIOLOGY

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	10	10
2.	SA- I	2	6	12
3.	SA- II	4	4	16
4.	LA- I	6	3	18
5.	LA- II	8	3	24
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA	1-25 words	2 minutes	20 minutes
2.	SA- I	30-50 words	5 minutes	30 minutes
3.	SA- II	60-100 words	7 minutes	28 minutes
4.	LA- I	150-200 words	12 minutes	36 minutes
5.	LA- II	250-300 words	16 minutes	51 minutes
	Reading of question & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of options:

Questions of 6 & 8 marks will be general in option.

CLASS - XI

SOCIOLOGY

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
Section A:	**INTRODUCING SOCIOLOGY**	
I.	Sociology as a Discipline	8
II.	Basic Concepts	8
III.	Social Institutions	14
IV.	Culture and Socialization	6
V.	Social Processes	6
VI.	Methods and Techniques of Social research.	8
Section B:	**UNDERSTANDING SOCIETY**	
VII.	Social Structure and function	8
VIII.	Social Stratification and Mobility	8
IX.	Environment and Society	6
X.	Western Social Thinkers	8
	Total	80
Part – B: Internal – Project work		**20**
	Grand total	**100**

Section A: Introducing sociology

Unit I: Sociology as a discipline. **8 marks/18 periods**

a) Definition. b) Origin.
c) Nature & Scope. d) Relationship with other disciplines.

Unit II: Basic concepts. **8 marks/20 periods**

a) Society: Meaning, Definition. Characteristics.
b) Social Groups: Primary & Secondary, In-group & Out-group, Formal & Informal.
c) Social control: Formal & Informal.

Unit III: Social Institutions. **14 marks/27 periods**

a) Marriage: Definitions, Forms (Monogamy & Polygamy)
b) Family: Definitions, Types (Nuclear & Joint), Social functions.
c) Kinship: Definitions, Types, Incest Taboo, Degree and Usages, Terminologies.
d) Economic Systems: Primitive, Agrarian, Industrial, Mixed Economy, Developed & Developing Economy.
e) Political System: Power & Authority, Monarchy, Democracy.
f) Religion: Definition, Meaning, Characteristics.
g) Education: Meaning, Formal & Informal.

Unit IV: Culture and Socialization. **6 marks/12 periods**

a) Culture: Definition, Characteristics, Material & Non-Material, Cultural lag.
b) Socialization: Meaning, Stages, Agencies.

Unit V: Social Processes. **6 marks/12 periods**

a) Meaning, Definition. b) Types of Co-operation.
c) Accommodation. d) Assimilation.
e) Competition. f) Conflict.

Unit VI: Methods and Techniques of Social research. **8 marks/17 periods**

a) Observation: Participant & Non participant.
b) Interview: Schedule & Questionnaire.

Section B: Understanding Society.

Unit VII: Social structure and function. 8 marks/17 periods

a) Social Structure: Meaning, Elements (Status, Role, Norms, Values)

b) Social Functions: Meaning, Classification of functions.

Unit VIII: Social Stratification and Mobility. 8 marks/20 periods

a) Social Stratification: Meaning, Types of Stratification (Caste & Class)

b) Social Mobility: Meaning, Types.

Unit IX: Environment and Society. 6 marks/13 periods

a) Social Ecology.

b) Relationship of Environment & Society.

c) Environment crisis & Social response.

Unit X: Western Social thinkers. 8 marks/15 periods

a) Karl Marx on Class Conflict.

b) Emile Durkheim on Division of Labour.

c) Max Weber on Bureaucracy.

Part – B: Internal – Project work. 20 marks

a) Statement of the problem.

b) Methodology/ technique

c) Conclusion**.**

d) Viva: Based on the project work.

Internal/Project 20 Marks

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:
   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Note:

- *The project work is compulsory and has to be done by all students. The project work would involve the use of different methods / techniques of enquiry relevant for the topic.*
- *No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.*
- *The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.*

Prescribed textbook:

Introducing Sociology & Understanding Society - Nagaland Institute of Development studies. by Visakhonü Hibo, Kedilezo Kikhi & Alphonsus D'Souza

CLASS - XII
SOCIOLOGY

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit		Marks
SECTION A:	**STRUCTURE OF INDIAN SOCIETY.**	
I.	Challenges of unity in diversity.	8
II.	Structure of Society.	8
III.	Institutional Structure.	8
IV.	Social inequality.	8
V.	Society in Nagaland.	8
SECTION B:	**SOCIAL CHANGE IN INDIA.**	
VI.	Processes of social change in India.	10
VII.	State, Economic development & Social change.	10
VIII.	Education, Media and Social change.	8
IX.	Social Movement.	4
X.	Indian Sociologist.	8
	Total	**80**
Part – B: Internal (Project Work)		20
	Grand Total	**100**

Section A: Structure of Indian society.

Unit I: Challenges of unity in diversity. **8 marks/20 periods**

(a) Diversity in India and Factors of unity.

- Geographic, Religious, Cultural, Political, Linguistic & Racial.

(b) Problems of Communalism, Regionalism, Casteism.

Unit II: Structure of Society. **8 marks /15 periods**

(a) Social demographic structure, - Population growt - Birth, Death or Mortality, - Migration, - Age & Sex composition, - Rural & Urban distribution, - Literacy, - Present population Policy in India.

(b) Rural – Urban Divide and linkages in India.

Unit III: Institutional Structure. **8 marks/20 periods**

Marriage, Family & Kinship in India.

(a) Ways of acquiring mates among the tribal communities.

(b) Marriage among: Hindus, Muslims, Christians.

(c) Joint family: Meaning and changes,

(d) Kinship.

Unit IV: Social inequality. **8 marks/20 periods**

(a) Cast prejudice, Scheduled castes and other backward classes.

(b) Scheduled Tribes: Problems and Measures.

(c) The protection of Religious minorities.

(d) Women: Status, Measures to empower them.

Unit V: Society in Nagaland. **8 marks /20 periods**

(a) People: Tribes & Festivals.

(b) Economy: Shifting & Terrace cultivation.

(c) Religion: Traditional religion & Christianity.

(d) Education: Traditional institution, Advent of modern education.

(e) Politics: Statehood & Special provisions in the Constitution of India.

Section B: Social change in India

Unit VI: Processes of social change in India. 10 marks /20 periods

(a) Structural processes.

- Social consequences of Industrialization, Urbanization, Modernization.

(b) Cultural processes.

- Sanskritisation, Westernization, Secularization.

Unit VII: State, Economic development & Social change. 10 marks /20 periods

(a) Land reforms: Meaning, Objectives of land reforms in India.
Green Revolution: Meaning, Consequences.
Globalization & Liberalization: Meaning & Implication.

(d) Panchayati Raj: Meaning, Aims & Structure.

Unit VIII: Education, Media and Social change. 8 marks /14 periods

(a) Education as a factor of social change.

(b) Media and social change.

Unit IX: Social Movement. 4 marks/8 periods

Meaning, Characteristics & Types.

Unit X: Indian Sociologist. 8 marks/14 periods

(a) G.S Ghurye on Caste.

(b) Yogendra Singh: Tradition and Modernity.

(c) Radhakamal Mukerjee on Values.

Internal/Project 20 Marks

1. Project Work/Group Activity - 10 Marks
   - I) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:

   - Report Writing 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Note:

- *The project work is compulsory and has to be done by all students. The project work would involve the use of different methods / techniques of enquiry relevant for the topic.*
- *No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.*
- *The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.*

Prescribed book:
Sociology Class XII
Structures of Indian Society & Social Change in India - Nagaland Institute of Development studies.
By Visakuonü Hibo, Kedilezo Kikhi
and Alphonsus D' Souza

GEOGRAPHY

Objectives:

The course in Geography will help learners to:

- Familiarise themselves with the terms, key concepts and basic principles of geography;
- Search for, recognize and understand the processes and patterns of the spatial arrangement of the natural as well as human features and phenomena on the earth's surface;
- Understand and analyse the inter-relationship between physical and human environments and their impact;
- Apply geographical knowledge and methods of inquiry to new situations or problems at different levels-local/regional, national and global;
- Develop geographical skills, relating to collection, processing and analysis of data/information and preparation of report including maps and graphics and use of computers wherever possible; and
- Utilize geographical knowledge in understanding issues concerning the community such as environmental issues, socio-economic concerns, gender and become responsible and effective member of the community.

DESIGN OF QUESTION PAPER
GEOGRAPHY

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	5	5
2.	SA -I	2	8	16
3.	SA - II	3	8	24
4.	LA	5	4	20
5.	Map Question	2 + 3	2	5
	Total		**27**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficult	20	14

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length of answer	Expected time for each question	Total expected time
1.	VSA	20-30 words	2 minutes	10 minutes
2.	SA - I	40-50 words	4 minutes	32 minutes
3.	SA - II	50-70 words	7 minutes	56 minutes
4.	LA	200 words	13 minutes	52 minutes
5.	Map Question	-	7.5x2=15 minutes	15 minutes
6.	Reading Q. Paper & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of Options:

There will be no overall choice. However, an internal choice shall be provided in

i. 4(four) questions of 3 marks each

ii. 2 (two) questions of 5 marks each.

CLASS - XI
GEOGRAPHY

Unit-wise weightage

Part – A: External **Time: 3 hours** **Marks: 70**

Unit		Marks
SECTION A: FUNDAMENTALS OF PHYSICAL GEOGRAPHY		**35**
I.	Geography as a discipline	3
II.	The Earth	5
III.	Landforms	8
IV.	Climate	10
V.	The Oceans	4
VI.	Life on the Earth	3
VII.	Map Work	2
SECTION B: INDIA – PHYSICAL ENVIRONMENT		**35**
VIII.	Introduction	5
IX.	Physiography	10
X.	Climate, Vegetation and Soil	10
XI.	Natural Hazards and Disasters	7
XII.	Map Work	3
	Total	**70**
Part – B:	**Internal – PRACTICAL**	**30**
1.	Fundamentals of Cartography	12
2.	Topography and Weather Maps	10
3.	Practical Record Book	5
4.	Viva Voce	3
	Total	**30**
	Grand Total	**100**

SECTION A : FUNDAMENTALS OF PHYSICAL GEOGRAPHY

Unit I: Geography as a Discipline. **3 marks/4 periods**

Nature, Scope and evolution of geography as a discipline.

Branches of geography with emphasis on the importance of physical geography.

Unit II: The Earth. **5 marks/10 periods**

Origin and evolution of the Earth; Interior of the earth; Earthquakes and volcanoes – their types and distribution; Wegener's continental drift theory, plate tectonics, sea floor spreading.

Unit III: Landforms. **8 marks/16 periods**

Rocks: major types of rocks and their characteristics; Soils – major types and formation;

Concepts of evolution of land forms, Hierarchy of land forms.

Geomorphic processes – weathering and mass wasting, works of running water, wind, glacier and waves.

Unit IV: Climate. **10 marks/25 periods**

Atmosphere – composition and structure, elements of weather and climate. Insulation – factors controlling insulation distribution; Heat budget of the earth – heating and cooling of atmosphere, conduction, convection, terrestrial radiation, advection; Temperature – factors controlling temperature, horizontal and vertical distribution of temperature, inversion of temperature; Pressure – pressure belts, winds – planetary, periodical and local; air masses, fronts and cyclones. Precipitation – types – Rainfall – types and distribution; types of cloud. Hydrological cycle. World climate – classification (Trewartha), greenhouse effect, global warming and climatic changes.

Unit V: The Oceans. **4 marks/8 periods**

Water bodies on the earth's surface – types; Relief of the ocean floor.

Distribution of temperature and salinity of oceans; Types and distribution of ocean currents.

Unit VI: Life on the Earth. **3 marks/6 periods**

The biosphere classification of organisms; Ecosystems – components (biotic and abiotic) and types (terrestrial, aquatic, man-made); conservation of ecosystems.

Unit VII: Map Work. **2 marks/4 periods**

Map works-for identification only/relating to Units 1-VI.

Map work on World map.

SECTION B : INDIA PHYSICAL ENVIRONMENT

Unit VIII: Introduction. **5 marks/5 periods**

Location, and its factor in shaping India's place in the world. Geological history.

Unit IX: Physiography. **10 marks/19 periods**

Geological structure, physiographic divisions, Drainage system (with emphasis on the Himalayas and the Peninsular); concept of watershed.

Unit X: Climate, Vegetation and Soil. **10 marks/25 periods**

Weather and climate – Spatial and temporal distribution of temperature, pressure, winds and rainfall; Mechanism of the monsoon, monsoon seasons, impact of the monsoon on the people of the region; climatic regions of India.

Natural Vegetation – types and distribution, conservation and management of forests; wildlife – conservation and management.

Soil – classification (ICAR) and distribution, conservation of soil.

Unit XI: Natural Hazards and Disasters. **7 marks/14 periods**

Causes, consequences and Management.

Earthquakes, Landslides, Droughts, Floods, Cyclones.

Unit XII: Map works, relating to Units –VIII - XI. **3 marks/4 periods**

Part – B: Internal - Practical **30 marks**

1. Fundamentals of Cartography. **12 marks/12 periods**

Maps – types; Scale – types; construction of Linear scale, measuring distance, finding directions (in the field and on the map), use of conventional symbols in topographic maps and weather maps.

Latitudes, Longitudes and time.

Map projection-graphical construction of cylindrical equal area, Conical with one standard parallel and zenithal equidistant along with properties and uses.

2. Topographic and Weather Maps. **10 marks/28 periods**

Study of topographic maps; contour cross – section and identification of landforms (hills, valleys, waterfalls, cliffs).

Aerial photograph and satellite imageries; identification of physical and cultural features on the basis of tone and shape. Use of weather instruments and weather charts; wet and dry bulb thermometer, barometer, windvane, rain gauge; use of weather charts describing pressure, wind and rainfall distribution.

3. Practical Record Book. **5 marks**

4. Viva Voce. **3 marks**

NOTE : ***No question paper for practical work will be set by the Board.***

Prescribed textbooks:

Textbook of Geography – ***New Saraswati House (India) Pvt. Ltd.***

Reference book:

A Textbook of Geography – ***Arya Publications***

Sanjana Mahajan and R.K. Gupta.

Class -XII
GEOGRAPHY

Unit-wise weightage

Part – A: External **Time: 3 hours** **Marks: 70**

Unit		Marks
SECTION A: FUNDAMENTALS OF HUMAN GEOGRAPHY		**35**
I.	Human Geography	3
II.	People	5
III.	Human Activities	10
IV.	Transport, Communication and Trade	10
V.	Human Settlements	5
VI.	Map work	2
SECTION B: INDIA – PEOPLE AND ECONOMY		**35**
VII.	People	5
VIII.	Human settlements	4
IX.	Resources and Development	12
X.	Transport, Communication and International Trade	7
XI.	Geographical perspective on selected issues and problems	4
XII.	Map Work	3
	Total	**70**
Part – B: Internal – PRACTICAL		
1.	Processing of Data and Thematic Mapping	12
2.	Field study or Spatial Information Technology	10
3.	Practical record book	5
4.	Viva Voce	3
	Total	**30**
	Grand Total	**100**

SECTION A : Fundamentals of Human Geography

Unit I: Human Geography **3 marks/4 periods**

- Nature, Scope.

Unit II: People **5 marks/15 Periods**

- Population of the world - growth, distribution and density; components of population.
- Urban – rural composition; Age-sex Ratio, Determinants of population change.
- Human development – concept, selected indicators, international comparisons.

Unit III: Human Activities **10 marks/25 Periods**

- Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities.
- Secondary activities-concept; manufacturing industries; agro-processing, household, small scale and large scale industries; people engaged in secondary activities.
- Tertiary activities-concept; health, business, transport and communication; people engaged in tertiary activities.
- Quaternary activities-concept; knowledge based activities.

Unit IV: Transport, Communication and Trade 10 marks/20 Periods

- Land transport - roads, railways; trans-continental railways.
- Water transport- inland waterways; major ocean routes and ports.
- Air transport and the shrinking world; Intercontinental air routes.
- Oil and gas pipelines.
- Mass Communication; Satellite communication and cyber space; including computer networking: importance and usage for geographical information.
- International trade- its basis and changing patterns; ports as gateways of international trade; role of WTO in International trade.

Unit V: Human Settlements 5 marks/7 Periods

- Settlement types - rural and urban; functional classification; problems of human settlement in developing countries.

Unit VI: Map Work. 2 marks /4 periods

SECTION B : India: People and Economy

Unit VII: People 5 marks /12 periods

- Population: distribution, and density; population change through time with regional variations.
- The people of India- ethnic, linguistic and religious composition.
- Demographic patterns in terms of rural-urban, age, sex.
- Human Development - Regional patterns.

Unit VIII: Human Settlements 4 marks /8 Periods

- Rural settlements - types and distribution (forms, structure and function).
- Urban settlements – distribution, census; distribution of large cities.

Unit IX: Resources and Development 12 marks/30 Periods

- Resources- concept of resources; types and distribution; conservation of natural resources, sustainable development.
- Water resources-availability and utilization; scarcity of water and conservation methods-water harvesting and watershed management.
- Land use-general land use, agricultural land use; major crops (wheat, rice, tea, coffee, cotton, jute, sugacane and rubber); agricultural problems and development.
- Mineral and energy resources, distribution, major metallic (iron ore, copper, bauxite, manganese); non-metallic (mica, salt) minerals; conventional (coal, petroleum, natural gas and hydroelectricity) non-conventional energy source (solar, wind, biogas).
- Industries – types and distribution, factors affecting industrial location, changing pattern of selected industries-iron and steel, cotton textiles, sugar, petrochemical, and knowledge based industries, impact of liberalization, privatisation and globalisation on industries and its location.

Unit X: Transport, Communication and International Trade 7 marks /12 Periods

- Transport and communication-roads, railways, waterways and airways, oil and gas pipelines; national electric grids; communication networking - radio, television, satellite and computer.

- International trade- changing pattern of India's foreign trade; sea ports and airports as gateways of international trade.

Unit XI: Geographical Perspective on selected issues and problems 4 marks/9 periods

- Environmental degradation.
- Hunger and proverty.
- Urbanisation, Urbanisation-growth of cities; rural-urban migration; problems of slums; Urban waste disposal management.

Unit XII: Map work 3 marks/4 periods

PART B: PRACTICAL

1. Data Processing and Thematic Mapping. 12 marks/20 periods

a. Data analysis, diagrams and maps.

b. Tabulation and processing of data matrix; uses and calculating of averages, deviation measures and correlation.

c. Representation of data – construction of diagrams (bars, circles and flow charts).

d. Preparation of thematic maps; dot, choropleth and isopleths.

e. Use of computers in data processing and mapping.

2. Field Study or Spatial Information Technology 10 marks/10 periods

Field trip: Map orientation, observation and preparation of sketch map; survey on any one of local concerns.

I) population,

ii) ground water changes,

iii) Land – use and land-use changes,

iv) Poverty,

v) Energy issues,

vi) Land degradation, and

vii) Drought and flood.

3. Practical Record Book. 5 marks

4. Viva Voce. 3 marks

Note:

1. In survey, observation and questionnaire method may be adopted for data collection.
2. (Any one topic of local concern maybe taken up for the study); observation and questionnaire survey may be adopted for data collection; collected data may be tabulated and analysed with diagrams and maps.

OR

Spatial Information Technology.

Use of computers : Components of computers, roster and vector data, data sources, data entry, data manipulation, construction of diagrams and data mappings.

Prescribed textbooks:

Geography Class XII : New Saraswati House (India) Pvt. Ltd.

EDUCATION

Objectives:

- To familiarize students with ideas, practices, institutions and systems prevailing in the field of education.
- To make students aware of different thoughts given by educational thinkers.
- To make the students understand that psychology and education are deeply related to each other.
- To make students familiarized with basic concepts of educational psychology.
- To give students a glimpse into the history of educational development.
- To help them to understand the behavioural patterns of human beings.
- To create in students an interest in the study of human behaviour.
- To have a sympathetic understanding on others behaviour either as parents or as teachers in due course of their life.

DESIGN OF QUESTION PAPER
EDUCATION

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	10	10
2.	SA- I	2	6	12
3.	SA- II	4	4	16
4.	LA- I	6	3	18
5.	LA- II	8	3	24
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA	1-20 words	2 minutes	20 minutes
2.	SA- I	30-50 words	5 minutes	30 minutes
3.	SA- II	60-100 words	7 minutes	28 minutes
4.	LA- I	150-200 words	12 minutes	36 minutes
5.	LA- II	250-300 words	17 minutes	51 minutes
6	Reading of question & Revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of options:

Questions of 6 & 8 marks will be general in option.

CLASS - XI
EDUCATION

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION - A	22
I. Concept of education	
II. Aims of education	
III. Types and Agrencies of education	
SECTION - B	26
IV. Educational Thinkers	
V. Constitutional Provisions relating to education.	
VI. Indigenous education in India.	
VII. Indigenous system of education in Nagaland	
SECTION - C	26
VIII. Development of education in India	
IX. Concept of Discipline and Freedom.	
X. Cultural perspective of education.	
XI. Concept of Evaluation.	
SECTION - D	6
XII. Introduction to statistics in Education	
Total	**80**
Part – B: Internal (Project Work)	**20**
Grand total	**100**

SECTION – A **22 marks/45 periods**

Unit I: Concept of Education.

a) Meaning.
b) Definition.
c) Synonyms.
d) Different Concepts.
e) Meaning – Narrow and Broader.
f) Literacy and Education.

Unit II: Aims of Education.

a) Necessity of Aims in Education.
b) Individual Aim and Social Aim.
c) Synthesis of Individual Aim and Social Aim.
d) Specific Aims of Education.
- Citizenship, Vocational, National Integration.

Unit III: Types and Agencies of Education.

a) Formal, Informal and Non-Formal.
b) Agencies of Formal Education. - School and its Influences, Colleges.
c) Agencies of Informal Education. - Home, Mass Media.
d) Agencies of Non-Formal Education.
- Open Schools, Open Universities, Distance Education.

e) Guiding Agencies of Education.
- NCERT, UGC, UNISCO.

SECTION – B **26 marks/60 periods**

Unit IV: Educational Thinkers.

a) Pestalozzi.
b) Froebel.

c) Maria Montessori.
d) Mahatma Gandhi.
e) Rabindranath Tagore.
f) The Relevance of their Ideas in the present System of Education.

Unit V: Constitutional Provisions relating to Education.

a) Free and Compulsory Education.
b) Education for Minorities
c) Religious Instruction
d) Education of Socially and Educationally backward Classes.
e) Instruction in Mother tongue.
f) National Language.

Unit VI: Indigenous Education in India.

a) Vedic Education.
b) Gurukula.
c) Pathasala.
d) Parishads.
e) Buddhist.
f) Islamic
g) Christian Missionaries.

Unit VII: Indigenous System of Education in Nagaland.

a) Family.
b) Morung.
c) Festivals.

SECTION – C **26 marks/60 periods**

Unit VIII: Development of Education in India.

a) The Charter Act of 1813.
b) Woods Dispatch 1854.
c) Hunter's Commission 1882.
d) Mudhaliar's Commission 1952.
e) Kothari's Commission 1946.
f) National Policy of Education 1986 and 1992.
g) New Initiatives of the Government

- SSA
- Communitisation in Nagaland.
- RMSA.

Unit IX: Concept of Discipline and Freedom.

a) Freedom.
b) Discipline
c) Order
d) Relationship between Discipline and Order.
e) Reward and Punishment.
f) Importance of Discipline in Social life.

Unit X: Cultural Perspective of Education.

a) Meaning and Definitions.
b) Functions.

c) Preservation, Transmission and Development.
d) Socialization.

Unit XI: Concept of Evaluation.

a) Function.
b) Types of Examination
c) Formative and Summative Approach.
d) Continuous and Comprehensive Evaluation.

SECTION – D **6 marks/15 periods**

Unit XII: Introduction to Statistics in Education.

a) Statistics: Meaning and its Uses in the field of Education.
b) Collection, Tabulation and Graphic representation of data (Bar, Histogram & Polygon)

Part – B: Internal – Project Work. **20 marks**

Project work.

The student shall be required to undertake a minimum of 2 projects. The project would involve the use of different methods of enquiry and related skills, related to the topics covered in the course. Some of the topics are highlighted below:-

- Conduct a comparative study on the examination result of any three classes in any institution for the last five years by applying your knowledge on unit-XII.
- Give a historical survey of the role of church in spreading education in the context of Nagaland.
- Conduct a survey in your institution and identify the problems and grievances faced by the students in any two consecutive classes.
- Give a detail report on any three Naga tribal festivals.
- Prepare a report on the influences of mass media on younger generations.
- Suggest the utility of modern mass media materials for classroom teaching.

Subject teacher is free to give any other topic from the syllabus covered.

1. Project Work/Group Activity - 10 Marks
   i) Case Study
   ii) Field/Exposure Trip
   iii) Group Discussion

   Distribution of Marks:

   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Note:

- *The project work is compulsory and has to be done by all students.*
- *No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.*
- *The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.*

Prescribed textbook:

Education Class XI – Goyal Brothers Prakashan

CLASS - XII
EDUCATION

Unit-Wise weightage

Part – A: External **Time: 3 hrs** **Marks: 80**

Unit	Marks
SECTION - A	**26**
I. Educational Psychology	
II. Growth and development.	
III. Stages of human development.	
IV. Heredity and Environment.	
SECTION - B	**28**
V. Physical basis of mental life.	
VI. Mental health and hygiene.	
VII. Attention and Interest.	
VIII. Learning.	
IX. Memory and Forgetting.	
SECTION - C	**22**
X. Habits.	
XI. Intelligence.	
XII. Personality.	
XIII. Individual differences.	
SECTION - D	**4**
XIV. Measurement of central tendencies	
Total	**80**
Part – B: Internal – Project Work	**20**
Grand Total	**100**

SECTION – A **26 marks /55 periods**

Unit I – Educational Psychology

(a) Meaning.
(b) Definitions.
(c) Psychology – a developing positive science.
(d) Branches of Psychology.
(e) Utility of psychology in education.
(f) Relationship between psychology and education.
(g) Differences between psychology and education.

Unit II – Growth and development.

(a) Meaning of Growth, Development and Maturation.
(b) Characteristics and principles of growth and development.
(c) Differences between growth and development.

Unit III – Stages of human development.

(a) Introduction.
(b) Classification of stages.
- Infancy.
- Childhood.
- Adolescence
- Physical, emotional, intellectual and social development in each stage.

(c) Educational significance of each stage.

Unit IV – Heredity and Environment.

(a) Introduction.
(b) Meaning and definitions.
(c) Classification of heredity.
- Biological.
- Mental.
- Social.

(d) Transmission of acquired traits.
(e) Laws of heredity.
- Like begets like.
- Law of variation.
- Law of regression.

(f) Environment.
(g) Classification of environment.
- Physical.
- Mental.
- Social.
- Culture.

(h) Controversy between Heredity and Environment.
(i) Synthesis between Heredity and Environment.
(j) Educational Significance.

SECTION – B **28 marks/65 periods**

Unit V – Physical basis of mental life.

(a) Nervous system.
(b) Central nervous system and peripheral nervous system.
(c) Receptors.
(d) Effectors.
(e) Sensation.
(f) Perception.
(g) Conception.

Unit VI – Mental health and hygiene.

(a) Meaning.
(b) Characteristics.
(c) Nature and scope.
(d) Forms of maladjustment.
(e) Factors of mental health in school.

Unit VII – Attention and Interest.

(a) Attention.
- Meaning and definition.
- Nature of attention.
- Conditions of attention.
- Types of attention.

(b) Interest.
- Meaning and definition.
- Characteristics of interest.

(c) Relationship between attention and interest.

Unit VIII –Learning.

(a) Meaning and definition.
(b) Nature of learning.

(c) Theories of learning.
(d) Laws of learning.
(e) Methods of learning.
(f) Educational significance.

Unit IX – Memory and Forgetting.

(a) Definition.
(b) Factors of memory.
(c) Signs of good memory.
(d) Improvement of memory.
(e) Meaning of forgetting.
(f) Causes of forgetting.

SECTION – C **22 marks/50 periods**

Unit X – Habits.

(a) Introduction.
(b) Nature of habits.
(c) Advantages of habits formation.
(d) Bad habits.
(e) Breaking of bad habits.

Unit XI – Intelligence.

(a) Meaning and definitions.
(b) Characteristics.
(c) Theories of intelligence.
- Monarchic theory.
- Anarchic theory.
- Two factor theory.

(d) Measurements of intelligence.
(e) Classifications of intelligence tests
(f) Concept of I.Q.

Unit XII – Personality.

(a) Meaning and definitions
(b) Nature and characteristics.
(c) Types of personality.
- Extrovert.
- Introvert.
- Ambiverts.

(d) Methods of personality assessment:
- Non – projective test.
- Observation.
- Situations.
- Questionnaire.
- Case study.
- Interview.
- Rating scale.

Unit XIII – Individual differences.

(a) Meaning.
(b) Areas of individual differences.
(c) Causes of individual differences.
(d) Educational significance.

(e) Special children.
- Differently abled.

SECTION - D

Unit XIV – Measurement of central tendencies. 4 marks/10 periods

(a) Mean.
(b) Median.
(c) Mode.

Part-B: Internal – project work. 20 marks

The students shall be required to undertake a minimum of two projects. The projects would involve the use of different methods of inquiry and related skills, related to the topics covered in the course. Some of the topics are highlighted below:-

· Prepare a survey on the factors that affect personality development of a child.
· Make a sample survey of problems faced by adolescent students in your locality and suggest the measures to address the problems.
· Prepare a questionnaire to assess the personality of 10 children and classify it according to the personality classification.
· Observe an infant and write down the observation to support the characteristics of infancy period that you have studied.
· Which school of thought do you support, (Heredity or Environment)? Justify your answers with examples.

Subject teacher is free to give any other topic from the syllabus covered.

1. Project Work/Group Activity - 10 Marks
   i) Case Study
   ii) Field/Exposure Trip
   iii) Group Discussion
   Distribution of Marks:
   - Report Writing 7 marks
   - Viva voce 3 marks
2. Formal Test 4 marks
3. Assignments 4 marks
4. Students' Internal Assessment Portfolio 2 marks

Note:

· *The project work is compulsory and has to be done by all students.*
· *No question paper for the internal will be provided by the Board. At the end of the academic session, the consolidated marks of internal and external will be considered for all purpose.*
· *The students should get minimum qualifying marks both in internal and external respectively i.e., 6 for internal and 27 for external to be qualified for the next higher class.*

Prescribed textbook:
Education Class XII – Frank Educational Aids Pvt. Ltd.

MUSIC

Objectives:

- This textbook takes the student a little deeper into the actual structure of music writing and music making. Further complexity of musical structure with regard to keys, rhythm and harmony are developed.
- The Alto Clef is introduced leading to an introduction to orchestration and transposition. The Tenor Clef also, which is used for writing music for instruments that required a lower register of pitch easing the necessity of using a lot of ledger lines. More complex harmonic and melodic structures are introduced with special emphasis given to chord progression and writing of the Bass line.
- New musical terms and symbols are added to the student's vocabulary of musical idioms. They are also introduced to the basic knowledge of various western classical instruments and their families eg. Strings, Brass, Wood winds etc. Modulation is introduced as this leads to greater interest and richer harmonies. New words symbols and words describing musical textures are introduced. Rudimentary Form is introduced.
- There is a new chapter on the basic History of classical music. Care has been taken to collate the theoretical information given to students with its practical applications.

DESIGN OF QUESTION PAPER
MUSIC

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	12	12
2.	SA-I	2	10	20
3.	SA-II	4	5	20
4.	LA-I	6	3	18
	Total		**30**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	25	18
2.	Average	60	42
3.	Difficult	15	10

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected time for each question	Total expected time
1.	VSA	2 minutes	24 minutes
2.	SA - I	4 minutes	40 minutes
3.	SA - II	10 minutes	50 minutes
4.	LA - I	17 minutes	51 minutes
5.	Reading of question & Revision	-	15 minutes
		Total time	**180 minutes**

Scheme of Options:

Questions of 4 & 6 marks will be general in option.

CLASS – XI
MUSIC

Unit-Wise weightage **Marks 100**

Unit	Marks
Part – A External (Theory)	**70**
Part – B: Internal (Practical)	**30**
Grand Total	**100**

Part – A: External **Time : 3 hrs** **70 marks**

- **Music Theory**

1. Alto Clef.
2. New Time signatures.
3. Harmonic rhythm
4. Setting words to a rhythm
5. Enharmonic equivalents.
6. The chromatic scale.
7. The circle of 5ths, more new keys, Labelling scales, Working out the key of a piece.
8. Labelling inversions of tonic triads, Arpeggios, Broken chords, Subdominant triads, Chord progression.
9. Writing your own tunes to a given rhythm, Writing a bass line, Writing a tune,
10. Unaccented passing notes.
11. 4-part chords.
12. Plagal Cadences.
13. Intervals – augmented 4ths and diminished 5ths.
14. Transposing tunes up or down a perfect 4^{th} or 5^{th}
15. The dominant 7^{th} chord.
16. Musical words and symbols.
17. Analysis

Part – B: Internal (Practical) **30 Marks**

i. Identify a played scale as Major, Natural, Harmonic or Melodic minor or Chromatic. 6

ii. Identify any one of given or played interval as: 3
i) a unison ii) a major second iii) a major third
iv) a perfect fourth v) a perfect fifth

iii. Identify Meters: duple (2/4), triple (3/4), quadruple (4/4), fast compound duple (6/8) 3

iv. Sing the interval of either: Augmented 4^{th} or Diminished 5^{th} , Minor 6^{th} or Augmented 5^{th} from any given note. 6

v. Sight-sing a simple melodic passage in 3/4 or 4/4 of 4 measures / bars in length using ω (semi-breve), η. (dotted minim), η (minim), θ (crotchet) (only in the key of C major) (2 marks each for pitch, time and rhythm) 6

vi. Identify 3 cadences which will be played twice: 6

a) Perfect cadence
b) Plagal cadence
c) Imperfect cadence
d) Interrupted cadence

Prescribed textbook:
A textbook of Music for Class XI – Publication of NBSE, Kohima.

CLASS – XII
MUSIC

Unit-Wise weightage
Part – A: External **Time: 3 hrs** **Marks: 70**

Unit	Marks
I. Music Theory	60
II. History of Western Music	10
Total	**70**
Part – B: Internal (Practical)	30
Grand total	**100**

Part – A: External **70 marks**

1. Tenor Clef
2. Note values and rests
3. New Time signatures
4. Writing your own tunes to a given rhythm, setting words to a rhythm, writing a bass line, writing a tune.
5. Pentatonic major scales on C and G
6. The circle of 5ths, more about the new keys, G sharp minor and the double sharp.
7. Labelling scales, Arpeggios.
8. Working out the key of a piece.
9. Transposing tunes up or down.
10. Supertonic triads, Chord progression.
11. Accented passing notes and auxiliary notes.
12. Imperfect cadences.
13. Inverting Intervals.
14. 4-parts chords.
15. Modulation.
16. Analysis, including Musical words and symbols.
17. History of Western music

Part B: Internal (Practical)

I. Group: **30 Marks**

1. Melodic Dictation- To write out a short melodic passage played in any major key (upto 4 sharp or 4 flats only). Length will be for 4 bars only and specified meter times are 4/4 and 3/4 only. 3
2. Identify Intervals- To identify the interval formed by any 2 notes played by the examiner: 3

a unison	a perfect fifth
a minor second	a minor sixth
a major second	a major sixth
a minor third	a minor seventh
a major third	a major seventh
a perfect fourth	an octave

3. Modulation – Listen to a passage played and state whether it modulates to the subdominant or the dominant key.

   The Examiner will state the starting Tonic key of the passage. The student can respond by using either terms – subdominant or specific key, dominant or specific key. 3
4. Musical period- To listen to a recording of any one of the musical periods studied in the course – Baroque, Classical and Romantic.

   After listening, the student will be required to state the musical period only. 3

II. Individual:

1. Rhythm Assessment- Tap a conduct a given passage (played) of any one hymn and of a short musical excerpt or piece.

   a) in 3/4 or 4/4 meter b) in 6/8 meter.

   The student will listen to the music for the first time and then respond by tapping or conducting along with the examiner during the second time.

   After conducting or tapping, the student will be required to state the meter. 3 +3=6
2. To listen to a passage in any major key and then state the cadence as Perfect/ Imperfect/ Plagal/ Interrupted. 3
3. To listen to a short passage and state whether it was in major or minor key. 3
4. To Sight-sing on 8 measure passage in

   a) Soprano or Alto (female voice)

   b) Tenor or Bass (male voice) 3+3= 6

Prescribed textbook:

Music textbook XII – Publication of NBSE, Kohima.

(Theory & Practical)

ECONOMICS

Rationale

Economics is one of the social sciences, which has greater influence on every human being, yet it has received little attention in the school curriculum in India. As economics life and the economy go through changes, the need to give education in children's own experience becomes essential. While doing so, it is to observe and understand the economics realities. Bringing in economics as an abstract knowledge at the early stages of school education would promote rote methods of learning the subject.

At higher secondary stage, the learners are in a position to understand abstract ideas, exercise the power of thinking and to develop their own perception. It is at this stage, the learners are exposed to the rigour of the discipline of economics in a systematic way.

The economics courses are introduced in such a way that in the initial stage, the learners are introduce to the economic realities that the nation is facing today along with some basic statistical tools to understand these broader economic realities. In the later stage, the learners are introduced to economics as a theory of abstraction.

The economic courses also contain many projects and activities. These will provide opportunities for the learner to explore various economic issues both from their day-to-day life and also from issues, which are broader and invisible in nature. The academic skills that they learn in these courses would help to develop the projects and activities. The syllabus is also expected to provide opportunities to use information and communication technologies to facilitate their learning process.

OBJECTIVES

- Understanding of some basic economic concepts and develop economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
- Realisation of learner's role in nation building and sensitise them to the economic issues that the nation is facing today.
- To equip with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond higher secondary stage.
- To develop an understanding that there can be more than one view on any economic issues and to develop the skills to argue logically with reasoning.

DESIGN OF QUESTION PAPER
ECONOMICS

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	**10 – Part I – 6 Q** **Part II – 4 Q**	10
2.	SA-I	2	**5 – Part I – 3 Q** **Part II – 2 Q**	10
3.	SA-II	4	**5 – Part I – 3 Q** **Part II – 2 Q**	20
4.	LA-I	6	**4 – Part I – 2 Q** **Part II – 2 Q**	24
5.	LA-II	8	**2**	16
	Total		**26**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl. no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	VSA	One word/one sentence	2 minute	20 minutes
2.	SA-I	30-50 words	5 minutes	25 minutes
3.	SA-II	60-80 words	8 minutes	40 minutes
4.	LA-I	90-120 words	12 minutes	48 minutes
5.	LA-II	130-200 words	16 minutes	32 minutes
6.	Reading Q.paper & revision	-	-	15 minutes
			Total time	**180 minutes**

Scheme of options:
Questions of 6 & 8 marks will be general in option.

CLASS-XI
ECONOMICS

Unit-wise weightage

Part – A: External **Time: 3 Hrs.** **Marks: 80**

Units		Marks
PART I:	**MICRO ECONOMICS**	
1.	Introduction	6
2.	Demand, Supply & Market Mechanism	14
3.	Elasticity (Demand and Supply)	9
4.	Behavior of Consumers & Producers.	7
5.	Form of Market & Price Determination	8
PART II:	**STATISTICS FOR ECONOMICS**	
1.	Introduction	4
2.	Collection, Presentation and Organisation of Data	9
3.	Statistical Averages and Dispersion	14
4.	Correlation, Index Numbers and Time series	9
	Total	**80**
Part – B: Internal		20
	Grand Total	**100**

Part – A: External ***80 Marks/180 Periods***

Part- 1 MICRO ECONOMICS

Unit 1: Introduction 6 marks/12 periods

- Definition of Economics, Positive & Normative Economics, Micro & Macro Economics, Factors of production- Land, Labour, Capital, Entrepreneur, Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost, Difference between Accounting Cost & Opportunity Cost, Economics System – Basic Features.

Unit 2: Demand, Supply & Market Mechanism 14 marks/32 Periods

- Demand: Demand and its determinants, law of demand, Individual and Market Demand, Demand Schedule, Demand Curve, movement along and shift in the demand curve, Exception to Law of Demand.
- Supply – Supply and its Determinants, Law of Supply, Individual and Market supply, supply schedule, supply curve, movement along and shifts in supply curve, Exception to the law of Supply.
- Market Mechanism – Equilibrium and Disequilibrium, Shortage and Surplus, Application of Demand and Supply Analysis.

Unit 3: Elasticity 9 marks/21 Periods

(a) Price Elasticity of Demand**.**
(b) Income Elasticity of Demand.
(c) Cross Elasticity of Demand.

* **(Definitions only)**

Factors Affecting the Elasticity of Demand.
Methods of Calculating Price Elasticity-

1. Percentage Method
2. Geometric Method
3. Total Expenditure Method.

Simple Numerical Problems on Each Method.

Elasticity of Supply –Measurement of Elasticity of Supply.

1. Percent change Method.
2. Geometric Method

Unit 4. Behavior of Consumers & Producers 7 marks /15 Periods

- **Consumers Behavior** – Meaning of Utility, Total Utility, marginal Utility, Law of Diminishing Marginal Utility, Consumer's Equilibrium.
- **Cost** – Concepts and Relationship Between Short Run and Long Run Costs (all cost total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost)
- **Revenue** – Total revenue Average Revenue Marginal Revenue Producer's Equilibrium-meaning and its conditions – under (a) Total Revenue – Total Cost Approach and (b) Marginal Revenue- Marginal Cost Approach.

Unit 5. Form of Market and Price Determination. 8 marks/16 Periods

Forms of Market – Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly and Monophony – their meaning and basic features. Price determination under perfect competition.

Part-II STATISTICS FOR ECONOMICS

Unit 1: Introduction 4 marks/10 Periods

Meaning, Scope, Importance and limitations of Statistics with special reference to Economics.

Unit 2: Collection, Presentation and Organisation of Data 9 marks /21 Periods

Collection of Data – Source of Data – Primary and Secondary, Method of Collecting Data. Some Important Source of Secondary Data, Organisation of Data - Meaning and Types of Variables, Frequency, Presentation of data – Tabulation, Diagrammatic presentation (bar diagrams, pie-diagrams, line graphs, histograms, polygon and Ogive Curves).

Unit 3: Statistical Averages and Dispersion 14 marks/32 Periods

Mean, Mode, Median and Quartiles.

Dispersion- Measures of Dispersion (range, quartile deviation, mean deviation, standard deviation) and co-efficient of variation.

Unit 4: Correlation and Index Numbers and Time Series 9 marks/21 Periods

Meaning and significant, Scatter diagram, Measures of correlation – Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation.

Introduction to index numbers, meaning Laspeyre's & Paasche's & Fisher's index – Wholesale price index, Consumer Price Index and Index of Industrial Production, uses of index numbers.

Time Series: meaning, Importance of time series Analysis, Components of time series.

Part – B: Internal 20 marks

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:
   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Guidelines for Assessment

1. Formal Testing – **4 Marks**

   Teacher shall conduct Periodical Formal Testing from time to time/ when a chapter or topic is taught to assess the learning outcome of the students. The teacher shall evaluate the test; award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the Internal Assessment Marks. These marks should be in no way a one-time assessment.
2. Assignments – **4 Marks**

   The teacher shall give assignment judiciously spread over the whole academic year. These assignments shall be evaluated and award marks according to the performance of the student in the assignment. The average marks secured from the assignment shall be added to the Internal Assessment Marks.
3. **Project Work (any one) 10 marks**

   (The list of Project is only Exemplary & not exhaustive)

   (i) Consumer Awareness amongst households through collection of Primary Data by designing a questionnaire.

   (ii) Productivity Awareness amongst enterprises through uses of statistical data from statistical tables from Newspaper/RBI Bulletin/Budget/Census Reports/Economic Survey, etc.

(iii) Demand, Supply and Market Equilibrium: Each student shall choose any vegetable of her choice. Interview three consumers to find out what their demand would be at 5 different price levels of the commodity. Interview 3 vegetable vendors to find out what they would supply at each of the same 5 price levels.

Based on the data collected, a student will:

a. Construct individual and market demand and supply schedules
b. Determine if there is an equilibrium price that will prevail in the market explain how the market will react if the price is above and below the determined equilibrium price.

The results of project should highlight

- Understanding of the concepts of demand, supply and equilibrium price.
- Construction of an individual and market demands and supply schedules.
- Understanding of how equilibrium price is determined in the market.

(iv) Producer's equilibrium:

Visit a local shop/industry/school/restaurant and understand its production process. Interview the owner to understand what the accountancy profit is for the production unit. Your discussion should also be able to detail:

a. The fixed and variable factors and their associated costs.
b. The normal profit of the production unit.
c. Are there and implicit costs.

The conclusion should show:

- Understanding of a production process.
- Reorganization of fixed and variables factors in a production process.
- Association of fixed and variables costs of production.
- Determination of revenue of production unit.

(v) Role of PDS in assuring supply of necessities in rural areas.
=>Students will visit the local ration shop to collect information on

a) Number of consumers
b) Availability/Shortage of necessary goods.

Note: The Project work is compulsory and has to be done by all students.

The minimum pass criteria for the project work shall be 6 (six) marks out of 20 marks.

No question paper for project work will be set by the Board. It is purely internal and the institution must include the project work marks with the theory marks.

Prescribed textbook:

Economics for Class XI – Geeta Publishing House

CLASS XII
ECONOMICS

Unit-wise Weightage

Part – A: External ***Time 3 Hrs*** ***80 Marks***

Units		Marks
PART I: Macro Economics		
1.	Introduction	5
2.	National Income and related Aggregates: Basic Concepts and Measurements	14
3.	Theory of income and Employment	12
4.	Money and Banking	6
5.	Monetary Policy, Fiscal Policy and Government Budget.	7
PART II: Indian Economic Development		
1.	Introduction	5
2.	Structural Changes in the Indian Economy After liberalization	6
3.	Current challenges Facing Indian Economy	12
4.	Planning and Economic Development in India	6
5.	Economic Growth and Development	7
	Total	**80**
Part – B: Internal		20
	Grand Total	**100**

Part – A: External ***80 Marks/180 Periods***

Part- I MACRO ECONOMICS

Unit 1: Introduction **5 marks/12 Periods**

Macroeconomics: Its meaning and scope viz Central Problems: - Growth, Inflation, Employment. Some basic concepts of macroeconomics: Business Cycle, Aggregate Demand, Aggregate Supply, Consumption goods, Capital Goods, Final Goods, Intermediate Goods; Stock and Flows; Gross Investment and Depreciation.

Unit 2: National Income and related Aggregates: Basic Concepts and Measurement. **14 marks/28 periods**

Circular flow of income; Methods of calculating National Income – Value Added or Product method, Expenditure method, Income method.

Concepts and aggregates related to National Income: Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic Product (GDP and NDP) – at market price, at factor cost; National Disposal Income (gross and net), Personal Income and Personal Disposable Income; Real and Nominal GDP. GDP and Welfare. Simple Numerical Examples.

Unit 3: Theory of Income and Employment **12 marks/25 Periods**

Aggregate demand and its components. Consumption Function and Investment Function, Propensity to consume and propensity to save, equilibrium output, Types of unemployment.

Unit 4: Money and Banking **6 marks/15 Periods**

Money – Meaning, Functions and types. Supply of money – Currency held by the public and net demand deposits held by commercial banks – Definition and Functions, Money and Credit Creation by Commercial banks. Central Bank – Meaning and Functions.

Unit 5: Monetary Policy, Fiscal Policy and Government Budget 7 marks/16 Periods

Monetary policy – Meaning types and tools.

Fiscal policy – Meaning types and tools.

Government budget – meaning, objectives, components and types. Classification of receipts – revenue receipt and capital receipt; classification of expenditure – revenue expenditure and capital expenditure. Various measures of government deficit – revenue deficit, fiscal deficit, primary deficit: their meaning and implications.

Part-II INDIAN ECONOMIC DEVELOPMENT

Unit 1: Introduction 5 marks/12 Periods

- Parameters of Development – Per capita Income, Human Development in India.
- A brief introduction of the state of the Indian Economy on the eve of Independence. Main features, problems and policies of agriculture and Foreign Trade.

Unit 2: Structural Changes in Indian Economic after liberalization 6 marks/15 Periods

- Meaning, Need, Significant, and Features of Liberalization, Globalization, Disinvestment and Privatization. Present Features of Indian Economy.

Unit 3: Current challenges Facing Indian economy 12 marks/26 Periods

- Poverty – absolute and relative; Main programmes for poverty alleviation: A critical assessment; Rural development: Key issues – credit and marketing – role of cooperatives; agricultural diversification; alternate farming- organic farming.
- Human Capital Formation: How people become resource; Role of human capital in economic development; Growth of Education Sector in India. Informal Economy Employment: Problems and Policies.
- Sustainable Economic Growth: Meaning, Effects of Economic Development on Resources and Environment.

Unit 4: Planning and Economic Development in India 6 marks/15 Periods

- Objectives, Targets, Achievements and Drawbacks of different Five Year Plans in India (A brief account).

Unit 5: Economic Growth and Development. 7 marks/16 Periods

- Economic Growth and Development – Meaning and Difference, Comparative Study of India and China on the Following Indicators: i) unemployment ii) GDP growth, iii) GDP per capita, iv) GDP purchasing power parity, v) amount in direct foreign investment, vi) inflation, vii) poverty.

Part – B: Internal 20 marks

1. Project Work/Group Activity - 10 Marks
   - i) Case Study
   - ii) Field/Exposure Trip
   - iii) Group Discussion

   Distribution of Marks:
   - Report Writing - 7 marks
   - Viva voce - 3 marks
2. Formal Test - 4 marks
3. Assignments - 4 marks
4. Students' Internal Assessment Portfolio - 2 marks

Guidelines for Assessment

1. Formal Testing – **4 Marks**

Teacher shall conduct Periodical Formal Testing from time to time/ when a chapter or topic is taught to assess the learning outcome of the students. The teacher shall evaluate the test;

award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the Internal Assessment Marks. These marks should be in no way a one-time assessment.

2. Assignments – **4 Marks**

The teacher shall give assignment judiciously spread over the whole academic year. These assignments shall be evaluated and award marks according to the performance of the student in the assignment. The average marks secured from the assignment shall be added to the Internal Assessment Marks.

3. **Project Work (any one)** **10 marks**

Macro Economics

1) Effect of changing rate on interest on automobiles sale.
2) Collect logos of 10 nationalized commercial Bank also collect data on rates of interest (last 1year) (CRR, SLR)
3) Information and pictures projecting evolution of money.

4. **Economic Growth and Development**

Identify any two indicators of economic growth and three indicators of economic development.

Collect data on these indicators for the last 5 years for atleast 4 countries- of which two are developing and 2 are developed.

Analyze the data that is collected to see the differences between economic growth and economic development.

5. **Globalization**

Divide the class into suitable groups. Each group shall make a wall magazines or collage that will critically analyse the impact of globalization and their family lives.

6. **Unemployment & Poverty.**

Conduct a comparative study of any 2 localities and present the data by questionnaire or interview method. To find out type of unemployment that exist, how it leads to poverty.

Note: The Project work is compulsory and has to be done by all students.
The minimum pass criteria for the project work shall be 6 (six) marks out of 20 marks.
No question paper for project work will be set by the Board. It is purely internal and the institution must ensure that the project works specified in the syllabus are done.

Prescribed book:
Economics for class XII - ***Geeta Publishing House***

ACCOUNTANCY

Objectives:

1. To familiarize students with the concept of Goods & Services Tax (GST).
2. To familiarize students with new and emerging areas in the preparation and presentation of financial statements.
3. To acquaint students with basic accounting concepts and accounting standards.
4. To develop the skills of designing need based accounting database.
5. To appreciate the role of ICT in business operations.
6. To develop an understanding about recording of business transactions and preparation of financial statements.
7. To enable students with accounting for Not-for-Profit organizations, accounting for Partnership Firms and company accounts.
8. To familiarize the students with accounting as an information system.
9. To develop the skills of using accounting equation in processing business transactions.
10. To enable the students to understand and analyse the financial statements.
11. To familiarize students with the fundamentals of computerized system of accounting.
12. To facilitate rational decision making by the students.

DESIGN OF QUESTION PAPER
CLASS – XI
ACCOUNTANCY

Weightage to different forms of questions:

Sl.no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	5	5
2.	SA	3	5	15
3.	LA-I	6	5	30
4.	LA-II	10	3	30
	Total		**18**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	16
2.	Average	60	48
3.	Difficult	20	16

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	Reading	-	-	5 minutes
2.	VSA	10-20 words	3 minutes	15 minutes
3.	SA	40-60 words	7 minutes	35 minutes
4.	LA-I	90-120 words	12 minutes	60 minutes
5.	LA-II	-	18 minutes	54 minutes
6.	Revision	-	-	11 minutes
			Total time	**180 minutes**

Scheme of Options:

There will be no overall choice. However, internal choice shall be provided in:

i. 5 (five) questions of 6 marks each
ii. 3 (three) questions of 10 marks each.

CLASS – XI
ACCOUNTANCY

Unit-wise weightage

Part A : External **Time : 3 Hrs.** **Marks : 80**

Units			Marks
Financial Accounting-1			
I	Theoretical Framework		14
II	Accounting Process		35
Financial Accounting-II			
III	Financial Statements of Sole Proprietorship from Complete and Incomplete Records		25
IV	Computers in Accounting		06
		Total	**80**
Part B: Internal			**20**
I. Project Work(Any one)		10 Marks	
II. Periodical Formal Testing		5 Marks	
III. Assignments		5 Marks	
		Grand Total	**100**

PART A: External **80 marks / 180 periods**

FINANCIAL ACCOUNTING - I

Unit-I: Theoretical Frame Work **14 marks/30 periods**

Introduction to Accounting

- Accounting- concept, objectives, advantages and limitations, types of accounting information; users of accounting information and their needs. Qualitative Characteristics of Accounting Information. Role of Accounting in Business.
- Basic Accounting Terms- Business Transaction, Capital, Drawings. Liabilities (Non Current and Current). Assets (Non Current, Current); Fixed assets (Tangible and Intangible), Expenditure (Capital and Revenue), Expense, Income, Profit, Gain, Loss, Purchase, Sales, Goods, Stock, Debtor, Creditor, Voucher, Discount (Trade discount and Cash Discount)

Theory Base of Accounting

- Fundamental accounting assumptions: GAAP:Concept
- Business Entity, Money Measurement, Going Concern, Accounting Period, Cost Concept, Dual Aspect, Revenue Recognition, Matching, Full Disclosure, Consistency, Conservatism, Materiality and Objectivity
- System of Accounting. Basis of Accounting: cash basis and accrual basis
- Accounting Standards: Need, benefits, limitations, applicability; IFRS- Need
- Goods and Services Tax (GST): Characteristics and Objective.

Unit-II: Accounting Process **35 marks/80 periods**

Recording of Business Transactions

- Voucher and Transactions: Source documents and Vouchers, Preparation of Vouchers, Accounting Equation Approach: Meaning and Analysis, Rules of Debit and Credit.
- Recording of Transactions: Books of Original Entry-
- Journal
- Special Purpose books:
- Cash Book: Simple, cash book with bank column and petty cashbook
- Purchases book
- Sales book
- Purchases return book
- Sales return book

Note: Including simple GST calculations

- Ledger: Format, Posting from journal and subsidiary books, Balancing of accounts

Bank Reconciliation Statement:

- Need and preparation, Bank Reconciliation Statement with Adjusted Cash Book

Depreciation, Provisions and Reserves.

- Depreciation: Concept, Features, Causes, factors
- Other similar terms: Depletion and Amortisation
- Methods of Depreciation:
  i. Straight Line Method (SLM)
  ii. Written Down Value Method (WDVM)

Note: Excluding change of method

- Difference between SLM and WDVM; Advantages of SLM and WDVM
- Accounting treatment of depreciation
  i. Charging to asset account
  ii. Creating provision for depreciation/ accumulated depreciation account
  iii. Treatment for disposal of asset
- Provisions and Reserves: Difference
- Types of Reserves:
  i. Revenue reserve
  ii. Capital reserve
  iii. General reserve
  iv. Specific reserve
  v. Secret Reserve
- Difference between capital and revenue reserve

Accounting for Bills of Exchange.

- Bill of exchange and Promissory Note: Definition, Specimen, Features, Parties.
- Difference between Bill of Exchange and Promissory Note
- Terms in Bill of Exchange:
  i. Term of Bill
  ii. Accommodation bill (concept)
  iii. Days of Grace
  iv. Date of maturity
  v. Discounting of bill
  vi. Endorsement of bill
  vii. Bill after due date
  viii. Negotiation
  ix. Bill sent for collection
  x. Dishonour of bill
  xi. Retirement of bill
  xii. Renewal of bill
- Accounting Treatment

Note: excluding accounting treatment for accommodation bill

Trial balance and Rectification of Errors

- Trial balance: objectives and preparation
  (Scope: *Trial balance with balance method only*)
- Errors: types-errors of omission, commission, principles, and compensating; their effect on Trial Balance.
- Detection and rectification of errors; preparation of suspense account.

FINANCIAL ACCOUNTING - II

Unit III: Financial Statements of Sole Proprietorship: From Complete and Incomplete Records **25 marks/50 periods**

Financial Statements

Receipts and Expenditure: Revenue receipts and capital receipts. Capital expenditure, Revenue expenditure and deferred expenditure

Objective and Importance.

Trading and Profit and Loss Account: Gross Profit, Operating profit and net profit. Preparation.

Balance Sheet: need, grouping and marshalling of assets and liabilities. Preparation.

Adjustments in preparation of financial statements with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, Abnormal loss, Goods taken for personal use/staff welfare, interest on capital and managers commission. Preparation of Trading and Profit and Loss account and Balance Sheet of a sole proprietorship with adjustments.

Incomplete Records

Features, Reasons and Limitations.

Ascertainment of profit/loss by statement of affairs method.

Difference between Accounts from incomplete records and Statement of Affairs. Preparation of Trading , Profit and Loss account and Balance Sheet.

Unit IV: Computers in Accounting **06 marks/20 periods**

Introduction to computer and accounting information system {AIS}: Introduction to computers (elements, capabilities, limitations of computer system)

- Introduction to operating software, utility software and application software. Introduction to accounting information system (AIS) as a part of Management Information System.
- Automation of accounting process: meaning
- Stages in automation: (i) Accounting process in a computerised environment; comparison between manual accounting process and computerised accounting process, (ii) Sourcing of accounting software; kinds of software: readymade software; customised software and tailor-made software; generic considerations before sourcing accounting software (iii) creation of account groups and hierarchy (iv) generation of reports - trial balance, profit and loss account and balance sheet.

Scope:

(i) The scope of the unit is to understand accounting as an information system for the generation of accounting information and preparation of accounting reports.

(ii) It is presumed that the working knowledge of any appropriate accounting software will be given to the students to help them learn basic accounting operations on computers.

Part B: Internal **20 marks**

Areas of Assessment

I. Project Work (Any one) **- 10 marks**

II. Periodic Formal Testing **- 5 marks**

III. Assignments **- 5 marks**

I. Project Work (Any one) **– 10 marks**

1. Collection of source documents, preparation of vouchers, recording of transactions with the help of vouchers.

2. Preparation of Bank Reconciliation Statement with the given cash book and the pass book with twenty to twenty five transactions.
3. Comprehensive project of any sole proprietorship business. This may state with journal entries and their ledgering, preparation of Trial balance. Trading and Profit and Loss Account and Balance Sheet. Expenses, incomes and profit (loss), assets and liabilities are to be depicted using pie chart / bar diagram.

COMPREHENSIVE PROJECT

It is suggested to undertake this project after completing the unit on preparation of financial statements. The student(s) will be allowed to select any business of their choice or develop the transaction of imaginary business.

The project is to run through the chapters and make the project an interesting process. The amounts should emerge as more realistic and closer to reality.

Specific Guidelines for Teachers

Give a list of options to the students to select a business form. You can add to the given list:

1. A beauty parlour
2. Men's saloon
3. A tailoring shop
4. A canteen
5. A cake shop
6. A confectionery shop
7. A chocolate shop
8. A dry cleaner
9. A stationery shop
10. Men's wear
11. Ladies wear
12. Kiddies wear
13. A Saree shop
14. Artificial jewellery shop
15. A small restaurant
16. A sweet shop
17. A grocery shop
18. A shoe shop
19. A coffee shop
20. A music shop
21. A juice shop
22. A school canteen
23. An ice cream parlour
24. A sandwich shop
25. A flower shop

After selection, advise the student(s) to visit a shop in the locality (this will help them to settle on a realistic amounts different items. The student(s) would be able to see the things as they need to invest in furniture, decor, lights, machines, computers etc.

A suggested list of different item is given below.

1. Rent
2. Advance rent [approximately three months]
3. Electricity deposit
4. Electricity bill
5. Electricity fitting
6. Water bill
7. Water connection security deposit
8. Water fittings
9. Telephone bill
10. Telephone security deposit
11. Telephone instrument
12. Furniture
13. Computers
14. Internet connection
15. Stationery
16. Advertisements
17. Glow sign
18. Rates and Taxes
19. Wages and Salary
20. Newspaper and magazines
21. Petty expenses
22. Tea expenses
23. Packaging expenses
24. Transport
25. Delivery cycle or a vehicle purchased
26. Registration
27. Insurance
28. Auditors fee
29. Repairs & Maintenance
30. Depreciations
31. Air conditioners
32. Fans and lights
33. Interior decorations
34. Refrigerators
35. Purchase and sales

At this stage performas of bulk of originality and ledger may be provided to the students and they may be asked to complete the same.

In the next step the students are expected to prepare the trial balance and the financial statements.

Weightage of marks for Project Work

1. Project File - 2 marks
2. Viva Voce on Problem solving - 2 marks
3. Problem Solving - 6 marks

II. Periodical Formal Testing 5 marks

Teacher shall give Periodical Formal Testing from time to time to assess the progress of the students. The teacher shall evaluate the test award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the internal assessment marks. This mark should be in no way a onetime mark.

III. Assignment 5 marks

Teacher shall give at least four (4) assignment from any topic from the syllabus. These assignments shall be evaluated and award according to the performance of the students in the assignment. The average marks secured from the assignments shall be added to the internal assessment marks.

Note : *The project work is compulsory and has to be done by all students. The minimum pass criteria for the project work shall be 6(six) marks out of 20(twenty) marks.*
No question paper for project work will be set by the Board.

Prescribed textbooks :

Tulsian's Accountancy - Srijan Publishers P.Ltd.
A Self study Textbook Class XI
by P. C. Tulsian, S. D. Tulsian

DESIGN OF QUESTION PAPER
CLASS – XII
ACCOUNTANCY

Weightage to different forms of questions:

Sl.no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	7	7
2.	SA	3	5	15
3.	LA-I	6	3	18
4.	LA-II	10	3	30
	Total		**18**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficult	20	14

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	Reading	-	-	5 minutes
2.	VSA	10-20 words	3 minutes	21 minutes
3.	SA	40-60 words	6 minutes	30 minutes
4.	LA-I	90-120 words	15 minutes	45 minutes
5.	LA-II	-	23 minutes	69 minutes
6.	Revision	-	-	10 minutes
			Total time	**180 minutes**

Scheme of Options:

There will be no overall choice. However, internal choice shall be provided in:

i. 3 (three) questions of 6 marks each.

ii. 3 (three) questions of 10 marks each.

CLASS – XII
ACCOUNTANCY

Unit-wise weightagePart A: External Time : 3 Hrs. Marks : 70

Units			Marks
Accounting for Not-for-Profit Organizations, Partnership Firms and Companies			
I	Financial Statements of Not-for-Profit Organizations		08
II	Accounting for Partnership Firms		20
III	Accounting for Companies		20
Financial Statement Analysis			
IV	Analysis of Financial Statements		12
V	Cash Flow Statement		10
		Total	**70**
Part B	**Internal - Project Work**		**30**
	Project work will include:		
	Project File	05 Marks	
	Written Test	20 Marks	
	Viva Voce	05 Marks	
		Grand Total	**100**

Part A: External 70 marks/ 180 periods

Accounting for Not-for-Profit Organizations, Partnership Firms and Companies

Unit I: Financial Statements of Not-for-Profit Organizations 08 marks/20 periods

- Not-for-profit organizations: concept.
- Receipts and Payments Account: features and preparation.
- Income and Expenditure Account: features, preparation of income and expenditure account and balance sheet from the given receipts and payments account with additional information.

Scope:

(i) Adjustments in a question should not exceed 3 or 4 in number and restricted to subscriptions, consumption of consumables and sale of assets/ old material.

(ii) *Entrance/admission fees and general donations are to be treated as revenue receipts.*
(iii) *Trading Account of incidental activities is not to be prepared.*

Unit II: Accounting for Partnership Firms **20 marks/55 periods**

Fundamentals

- Partnership: features, Partnership Deed.
- Provisions of the Indian Partnership Act 1932 in the absence of partnership deed.
- Fixed v/s fluctuating capital accounts. Preparation of Profit and Loss Appropriation account- division of profit among partners, guarantee of profits.
- Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio).
- Goodwill: nature, factors affecting and methods of valuation - average profit, super profit and capitalization.

Note: *Interest on partner's loan is to be treated as a charge against profits.*

Accounting for Partnership firms - Reconstitution and Dissolution.

- **Change in the Profit Sharing Ratio among the existing partners** - sacrificing ratio, gaining ratio, accounting for revaluation of assets and re-assessment of liabilities, and distribution of reserves and accumulated profits.
- **Admission of a partner** - effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and re- assessment of liabilities, treatment of reserves and accumulated profits, adjustment of capital accounts and preparation of balance sheet.
- **Retirement and death of a partner:** effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, treatment of reserves and accumulated profits.
- Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account, Preparation of Balance Sheet.
- **Dissolution of a partnership firm:** Types of partnership firms. Settlement of accounts - preparation of realization account, and other related accounts: (excluding piecemeal distribution, sale to a company and insolvency of partner's firm).

Note:

(i) If value of asset is not given, its realized value should be taken as nil.
(ii) In case, the realization expenses are borne by a partner, clear indication should be given regarding the payment thereof.

Unit-III Accounting for Companies **20 marks/55 periods**

Accounting for Share Capital

- Share and share capital: nature and types.
- Accounting for share capital:
  (i) issue and allotment of equity and preferences shares.
  (ii) Private placement of shares
  (iii) Employee Stock Option Plan (ESOP)
  (iv) Public subscription of shares
  (v) over subscription and under subscription of shares
  (vi) issue at par, at premium and at discount
  (vii) calls in advance and calls in arrears
  (viii) issue of shares for consideration other than cash.

- Accounting treatment of forfeiture and re-issue of shares.
- Disclosure of share capital in the company's Balance Sheet.

Accounting for Debentures

- Issue of Debentures: Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures as collateral security, interest on debentures.
- Redemption of debentures- Redemption in Lump sum, Redemption by draw of lots. Creation of Debenture Redemption Reserve.
  Note: Related sections of the Companies Act, 2013 will apply.

Financial Statement Analysis

Unit IV: Analysis of Financial Statements **12 marks/25 periods**

Financial statements of a company: Statement of Profit and Loss and Balance Sheet of a company in the prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013).

Note: *Exceptional items, extraordinary items and profit (loss) from discontinued operations are excluded.*

- **Financial Statement Analysis:** Objectives, importance and limitations.
- **Tools for Financial Statement Analysis:**
  Comparative statements, common size statements, cash flow analysis, ratio analysis.
- **Accounting Ratios:** Meaning, Objectives, classification and computation.

Liquidity Ratios: Current ratio and Quick ratio.

Solvency Ratios: Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio.

Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio and Working Capital Turnover Ratio.

Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment.

Note: Net Profit Ratio is to be calculated on the basis profit before and after tax.

Unit V: Cash Flow Statement **10 marks/25 periods**

- Meaning, objectives and preparation (as per AS 3 Revised) (Indirect Method)

Note:

(i) Adjustments relating to depreciation and amortization, profit or loss on sale of assets including investments, dividend (both final and interim) and tax.

(ii) Bank overdraft and cash credit to be treated as short term borrowings.

(iii) Current Investments to be taken as Marketable securities unless otherwise specified.

Part B: Internal **30 marks**

Project Work

- **Comprehensive Problem:** From the given set of Transactions Preparation of Vouchers, Books of Account, Trial Balance and Financial Statements of a Proprietorship Firm or a Partnership Firm.
- **Analysis:** Analysis of given data using analytical tools such as Ratio Analysis and Cash Flow.

Weightage of marks for Project Work

1.	Project File	–	5 marks
2.	Written Test	–	20 marks
3.	Viva Voce	–	5 marks

Note:Project work is compulsory and has to be done by all students.

The minimum pass criteria for the project work shall be 12 (twelve) marks out of 30 (thirty) marks.

No question paper for project work will be set by the Board. It is purely internal and the institution must ensure that the project works specified in the syllabus are done.

1. Project File

Objectives:

- To enable students to complete the accounting process in real business situations.
- To develop the competence of reading Accounting data of business firms and interpret the information on the basis of given guidelines to present the desirable information in required format in Project File.

Guidelines for Teachers

During the academic session, the students will work on **atleast three types of problems, out of which one will be of comprehensive nature.** The comprehensive problem will involve the students from the initial stage of accounting to the preparation and analysis of Financial Statements. The data provided will represent real life situations in a condensed form. The situations given in these problems will require a student to derive meaningful information for taking decisions for the purpose of investment, expansion, financing, etc.

Two problems will be specific, relating to Ratio Analysis and Cash Flow Statement. The situations given in problems will require a student to analyse the information given in the Financial Statements.

The student is expected to analyse the facts and present the information in a meaningful manner for interpretation. The teachers are first expected to discuss these problems thoroughly with their students and encourage them to come out with solutions. Teachers are also expected to collect the annual reports of companies and formulate their own problems for discussion and Project Work.

The students will prepare a Project File to record their work, related to the problems attempted by them.

1. First page of the file should describe title of work, identity of student, school and the teacher concerned.
2. Index to indicate columns for title of work, page no., date, teacher's remarks and signature.
3. The format for Project File will be:

- Problem details,
- Facts of the problem,
- Required information,
- Steps to solve the problem,
- Solution and presentation of information,
- Analysis and interpretation of information.

Project File should be neatly handwritten or typed with page numbers. Each step of the solution needs to be highlighted. Conclusions drawn are placed in boxes.

Guidelines for Examiners

1. The Project File is to be evaluated. Marks are to be awarded out of five marks.

The marks should be awarded based on:

- Context coverage
- Presentation
- Completeness and quality of work.

2. Written Test

Objectives:

- To give them exposure to analyse the financial statements of business firms and help them to derive meaningful information there from.
- To know how effectively the students have done the Project Work.

Guidelines for Teachers

The teacher will discuss with students all exercises given in the textbook and analyse the information given therein. They will identify relevant data required and work out solutions. The scope of cases will be restricted to Ratio Analysis and Cash Flow Statement.

Guidelines for Examiners

Students will be given 2 application oriented problems of 10 marks each from Ratio Analysis and Cash Flow Statement. The problems will be set in consultation with the teacher. The external examiner will discuss with the teacher the quantum of projects completed during the year and set the problems accordingly. Marks will be awarded on the steps taken, data identified and solution arrived at.

3. Viva Voce

Objectives:

- To test whether the students has understood topics covered and is able to express.
- To test whether the Project File presented by the student is the work done by him/her.

Guidelines for Teachers

1. During the course of the academic year, the teacher must give thorough practice to the students on Viva Voce examination on each aspect of the Project File.
2. Wherever possible, the teacher may invite a colleague/expert from another school for asking questions. This will rehearse the students for the final examination.

Guidelines for Examiners

The work done by students in Project File will form the basis of setting questions. The external examiner will ask 2, 3 questions to test the authenticity of the work done in the files.

Prescribed textbooks:

1. ***Tulsian's Accountancy*** - ***Srijan Publishers P. Ltd.***
   A Self study Textbook Class XII (Part-A)
   By: P. C. Tulsian
   Bharat Tulsian
2. ***Tulsian's Accountancy*** - ***Srijan Publishers P. Ltd.***
   A Self study Textbook Class XII (Part-B)
   By: P. C. Tulsian
   Bharat Tulsian

BUSINESS STUDIES

Objectives:

- To develop students with an understanding of the processes of business and its environment;
- To acquaint students with the dynamic nature and inter-dependent aspects of business;
- To develop an interest in the theory and practice of business, trade and industry;
- To familiarize students with theoretical foundations of the process of organizing and managing the operations of a business firm;
- To help students appreciate the economic and social significance of business activity and the social cost and benefits arising there from;
- To acquaint students with the practice of managing the operations and resources of business;
- To enable students to act more effectively and responsibly as consumers, employers, employees and citizens;
- To develop a business attitude and skills in students.
- To inculcate appropriate attitude and develop skills among students to pursue higher education, world of work including self employment.

DESIGN OF QUESTION PAPER
BUSINESS STUDIES

Weightage to different forms of questions:

Sl. No	Forms of Questions	Marks for each Question	No. of Questions	Total marks
1	VSA	1	8	8
2	SA-I	2	5	10
3	SA-II	4	8	32
4	LA	6	5	30
	Total		**26**	**80**

Weightage level of questions:

Sl. No	Level	Percentage	Marks
1	Easy	20	16
2	Average	60	48
3	Difficult	20	16
	Total	**100**	**80**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl. No	Forms of Questions	Expected length	Expected time for each question	Total expected time
1	Reading	-	-	5 minutes
2	VSA	10-20 words	2 minutes	16 minutes
3	SA-I	20-40 words	4 minutes	20 minutes
4	SA-II	60-80 words	8 minutes	64 minutes
5	LA	160-200 words	13 minutes	65 minutes
6		-	-	10 minutes
			Total time	**180 minutes**

Scheme of options:

There will be no overall choice. However, internal choice shall be provided in:

i. 4 (four) questions of 4 marks each
ii. 5 (five) questions of 6 marks each.

CLASS–XI
BUSINESS STUDIES

Unit wise Weightage:
Part – A: External **Time: 3 Hrs.** **Marks: 80**

Units		Marks
Section A:	**Foundations of Business**	
I.	Nature and Purpose of Business	10
II.	Forms of Business Organisations	10
III.	Public, Private and Global Enterprises	8
IV.	Business Services	8
V.	Emerging Modes of Business	6
VI.	Social Responsibility of Business and Business Ethics	6
Section B:	**Finance and Trade**	
VII.	Sources of Business Finance	8
VIII.	Small Business	8
IX.	Internal Trade	8
X.	International Business	8
	Total	**80**
Part – B:	**Internal**	**20**
	Grand Total	**100**

Part – A: External **80 marks/ 180 periods**

Section A: Foundation of Business

Unit I: Nature and Purpose of Business **10 marks/ 22 periods**

- History of Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centres, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy.
- Business Concept - Meaning and features
- Business, profession and employment Concept
- Objectives of business
- Classification of business activities - Industry and Commerce
- Industry-types: primary, secondary, tertiary Meaning and subgroups
- Commerce-trade: (types-internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication, and advertising) – meaning
- Business risk-Concept

Unit II: Forms of Business organizations **10 marks/ 22 periods**

- Sole Proprietorship-Concept, merits and limitations
- Partnership-Concept, types, merits and limitation of partnership, registration of a partnership firm, partnership deed. Types of partners
- Hindu Undivided Family Business: Concept
- Cooperative Societies-Concept, merits, and limitations
- Company-Concept, merits and limitations; Types: Private, Public and One Person Company - Concept
- Formation of company-stages, important documents to be used in formation of a company
- Choice of form of business organization

Unit III: Public, Private and Global Enterprises 8 marks/ 18 periods

- Public sector and private sector enterprises – Concept
- Forms of public sector enterprises: Departmental Undertakings, Statutory Corporations and Government Company
- Global enterprises (MNCs) – Features, Joint ventures, Public private partnership – concept

Unit IV: Business Services 8 marks/ 18 periods

- Business services and its types - Meaning. Banking: Types of bank accounts- savings, current, recurring, fixed deposit and multiple option deposit account
- Banking services with particular reference to Bank Draft, Bank Overdraft, Cash credit. E-Banking meaning, Types of digital payments
- Insurance-: Principles, Types –life, health, fire and marine insurance –concept
- Postal Service-Mail, Registered Post, Parcel, Speed Post, Courier-meaning.

Unit V: Emerging Modes of Business 6 marks/ 14 periods

- E-business (concept), scope and benefits
- Business Process Outsourcing (BPO): Concept, need and scope

Unit VI: Social Responsibility of Business and Business Ethics 6 marks/ 14 periods

- Concept of social responsibility
- Case of social responsibility
- Responsibility towards owners, investors, consumers, employees, government and community.
- Environment protection and business- Meaning and role
- Business Ethics-Concept and Elements

Section B: Finance and Trade

Unit VII: Sources of Business Finance 8 marks/ 18 periods

- Concept of business finance
- Owners' funds- equity shares, preferences share, retained earnings, Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) – concept
- Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit, Inter Corporate Deposits (ICD).

Unit VIII: Small Business and Enterprises 8 marks/ 18 periods

- Entrepreneurship Development (ED): Concept, Characteristics and Need – Process Entrepreneurship Development: Start-up India Scheme, ways to fund start-up – Intellectual Property Rights and Entrepreneurship
- Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act)
- Role of small business in India with special reference to rural areas
- Government schemes and agencies for small scale industries: National Small Industries Corporation (NSIC) and District Industrial Centre (DIC) with special reference to rural, backward areas

Unit IX: Internal Trade 8 marks/ 18 periods

- Internal trade - meaning and types services rendered by a wholesaler and a retailer
- GST (Goods and Services Tax): Concept and key-features
- Types of retail-trade-Itinerant and small scale fixed shops retailers
- Large scale retailers-Departmental stores, chain stores - concept
- Concept of automatic vending machine
- Main documents used in internal trade: Performa invoice, invoice, debit note, credit note. Lorry receipt (LR) and Railways Receipt (RR).

- Terms of Trade: Cash on Delivery (COD), Free on Board (FOB), Cost, Insurance and Freight (CIF), Errors and Omissions Excepted (E&OE)

Unit X: International Trade **8 marks/ 18 periods**

- International trade - concept
- International trade: concept and benefits
- Export trade- Meaning, objectives and procedure of Export Trade
- Import Trade- Meaning, objectives and procedure
- Documents involved in International Trade; indent, letter of credit, shipping order, shipping bills, mate's receipt (DA/DP), specimen of the documents, importance
- World Trade Organization (WTO) meaning and objectives

PART – B: Internal **20 marks**

Internal Assessment – 20 Marks
Qualifying Marks – 6 Marks

Areas of Assessment

1. Periodical Formal Testing– 5 Marks
2. Assignments – 5 Marks
3. Project work – 10 Marks

Total – 20 Marks

Guidelines for Assessment

1. Periodical Formal Testing – 5 Marks

Teacher shall conduct Periodical Formal Testing when a chapter or topic is taught to assess the learning outcome of the students. The teacher shall award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the Internal Assessment Marks. These marks should be in no way a one-time assessment.

2. Assignments – 5 Marks

The teacher shall give assignment judiciously spread over the whole academic year. These assignments shall be evaluated and award marks according to the performance of the student in the assignment. The average marks secured from the assignment shall be added to the Internal Assessment Marks.

3. Project Work – 10 Marks

List of Projects: (This list is only exemplary and not exhaustive) (Any one)

I. Case Study on a Product

Take a product having seasonal growth and regular demand with which students can relate. For example,

i. Apples from Himachal Pradesh, Kashmir.
ii. Oranges from Nagpur,
iii. Mangoes from Maharashtra/U.P./Bihar/Andhra Pradesh etc.
iv. Strawberries from Panchgani,
v. Aloe vera from Rajasthan,
vi. Walnuts/almonds from Kashmir,
vii. Guavas from Allahabad,
viii. Pineapples from North East India,
ix. Tea from Assam,
x. Orchids from Sikkim and Meghalaya,
xi. Pottery of Manipur,
xii. Fishes from coastal areas.

Students may develop a Case Study on the following lines:

i. Research for change in price of the product. For example, apples in Himachal Pradesh during plucking and non plucking season.
ii. Effect on prices in the absence of effective transport system.
iii. Effect on prices in the absence of suitable warehouse facilities.
iv. Duties performed by the warehouses.
v. Demand and supply situation of the product during harvesting season, prices near the place of origin and away. Students may be motivated to find out the importance of producing and selling these products and their processed items along with the roles of Transport, Warehousing, Advertising, Banking, Insurance, Packaging, Wholesale selling, Retailing, Co-operative farming, Co-operative marketing etc.

The teacher may develop the points for other projects on similar lines for students to work on. The teacher may assign this project as 'group' project and may give different products to different groups. It could conclude in the form of an exhibition.

II. Aids to Trade

Taking any one AID TO TRADE, for example Insurance and gathering information on following aspects:

i. History of Insurance Lloyd's contribution.
ii. Development of regulatory Mechanism.
iii. Insurance Companies in India
iv. Principles of Insurance.
v. Types of Insurance. Importance of insurance to the businessmen.
vi. Benefits of crop, orchards, animal and poultry insurance to the farmers.
vii. Terminologies used (premium, face value, market value, maturity value, surrender value) and their meanings.
viii. Anecdotes and interesting cases of insurance. Reference of films depicting people committing fraudulent acts with insurance companies.
ix. Careers in Insurance. Teachers to develop such aspects for other aids to trade.

III. Import /Export Procedure

The students should identify a product of their city/country which is imported /exported. They are required to find the details of the actual import/export procedure. They may take help from the Chambers of Commerce, Banker, existing Importers/Exporters, etc.

They should find details of the procedure and link it with their Text knowledge.

The specimens of documents collected should be pasted in the Project file with brief description of each. They may also visit railway godowns/dockyards/ transport agencies and may collect pictures of the same.

Presentation and submission of project report.

At the end of the stipulated term, each student will prepare and submit his/her project report. Following essentials are required to be fulfilled for its preparation and submission.

i. The total project will be in a file format, consisting of the recordings of the value of shares and the graphs.
ii. The project will be handwritten.
iii. The project will be presented in a neat folder.
iv. The project report will be developed in the following sequence-
    a) Cover page should project the title, student information, school and year.
    b) List of contents.
    c) Acknowledgements and preface (acknowledging the institution, the news papers read, T.V. channels viewed, places visited and persons who have helped).
    d) Introduction.

e) Topic with suitable heading.
f) Planning and activities done during the project, if any.
g) Observations and findings while conducting the project.
h) News paper clippings to reflect the changes of share prices.
i) Conclusions (summarised suggestions or findings, future scope of study).
j) Appendix (if needed).

Teachers report. Teachers will initial preface page. At the completion of the evaluation of the project, it will be punched in the centre so that the report cannot be reused but is available for reference only. The projects will be returned after evaluation. The school may keep the best projects.

ASSESSMENT

Allocation of Marks = 10 Marks
The marks will be allocated under the following heads:

1	Initiative, cooperativeness and participation	1 Mark
2	Creativity in presentation	1 Mark
3	Content, observation and research work	2 marks
4	Analysis of situations	2 marks
5	Viva	4 marks
	Total	**10 marks**

Note: The Internal is compulsory and has to be done by all the students.
The minimum pass criteria for the Internal shall be 6 (six) marks out of 20 (twenty) marks
No question paper for Internal will be set by the Board. It is purely internal and the institution must include the internal marks with the theory marks.

Prescribed Textbook:
Business Studies Class XI - V.K.Global Publications Pvt. Ltd.
By: R.K. Singla

CLASS–XII
BUSINESS STUDIES

Unit wise Weightage:

Part – A: External **Time: 3 Hrs.** **Marks: 80**

Units		Marks
Section A:	**Principles and Functions of Management**	
I.	Nature and Significance of Management	8
II.	Principles of Management	6
III.	Business Environment	5
IV.	Planning	6
V.	Organizing	6
VI.	Staffing	8
VII.	Directing	8
VIII.	Controlling	5
Section B:	**Business Finance and Marketing**	
IX.	Financial Management	8
X.	Financial Markets	8
XI.	Marketing Management	7
XII.	Consumer Protection	5
	Total	**80**
Part – B:	**Internal**	**20**
	Grand Total	**100**

Part – A: External **80 marks/ 180 periods**

Section A: Principles and Functions of Management

Unit I: Nature and Significance of Management **8 marks/ 18 periods**

- Management-concept; meaning and features, objectives, and importance
- Management as Science, Art and Profession
- Levels of Management
- Management functions-planning, organizing, staffing, directing and controlling
- Coordination- concept and importance

Unit II: Principles of Management **6 marks/ 14 periods**

- Principles of Management- concept and significance
- Fayol's principles of management
- Taylor's Scientific management- principles and techniques

Unit III: Business Environment **5 marks/ 11 periods**

- Business Environment- concept and importance
- Dimensions of Business Environment- Economic, Social, Technological, Political and Legal
- Demonetization - concept and features
- Impact of Government policy changes on business with special reference to liberalization, privatization and globalization in India

Unit IV: Planning **6 marks/ 14 periods**

- Concept, importance and limitation
- Planning process
- Single use and standing plans. Objectives, Strategy, Policy, Procedure, method Rule, budget and Programme

Unit V: Organising **6 marks/ 14 periods**

- Concept and importance
- Organising Process
- Structure of organisation- functional and divisional concept. Formal and informal organisation- concept

- Delegation: concept, elements and importance
- Decentralization: concept and importance

Unit VI: Staffing **8 marks/ 18 periods**

- Concept and importance of staffing
- Staffing as a part of Human Resource Management concept
- Staffing process
- Recruitment process
- Selection- process
- Training and Development- Concept and importance, Methods of training- on the job and off the job - vestibule training, apprenticeship training and internship training

Unit VII: Directing **8 marks/ 18 periods**

- Concept and importance
- Elements of Directing
- Supervision –concept, function of a supervisor
- Motivation-concept, Maslow's hierarchy of needs, Financial and non-financial incentives
- Leadership- concept, styles- authoritative, democratic and laissez faire
- Communication- concept, formal and informal communication; barriers to effective communication, how to overcome the barriers

Unit VIII: Controlling **5 marks/ 11 periods**

- Concept and importance
- Relationship between planning and controlling
- Steps in process of control

Section B: Business Finance and Marketing

Unit IX: Financial Management **8 marks/ 18 periods**

- Concept, role and objectives of Financial Management
- Financial decisions: investment, financing and dividend- Meaning and factors affecting
- Financial Planning- concept and importance
- Capital Structure- Concept
- Fixed and Working Capital- Concept and factors affecting their requirements

Unit X: Financial Markets **8 marks/ 18 periods**

- Financial Markets: Concept, Functions and types
- Money market and its instruments
- Capital market and its types (primary and secondary), methods of floatation in the primary market
- Stock Exchange- Functions and trading procedure
- Securities and Exchange Board of India (SEBI) - objectives and functions

Unit XI: Marketing Management **7 marks/ 15 periods**

- Selling and Marketing- Concept
- Marketing Management- Concept
- Marketing Functions
- Marketing management philosophies
- Marketing Mix – Concept and elements
- Product - branding, labelling and packaging - Concept
- Price- Concept, Factors determining price
- Physical Distribution - concept and components, channels of distribution: types, choice of channels

- Promotion – Concept and elements; advertising concept, role, objections against advertising, personal selling concept and qualities of a good salesman, sales promotion- concept and techniques, public relations- concept and role

Unit XII: Consumer Protection **5 marks/ 11 periods**

- Concept and importance of consumer protection
- Consumer Protection Act 1986: Meaning of consumer Rights and responsibilities of consumers: Who can file a complaint against whom? Redressal machinery Remedies available
- Consumer awareness- Role of consumer organizations and Non-Governmental Organizations (NGOs).

Part – B: Internal **20 marks**

Internal Assessment – 20 Marks
Qualifying Marks – 6 Marks

Areas of Assessment

1.	Periodical Formal Testing	–	5 Marks
2.	Assignments	–	5 Marks
3.	Project work	–	10 Marks
		Total –	**20 Marks**

Guidelines for Assessment

1. Periodical Formal Testing – 5 Marks

Teacher shall conduct Periodical Formal Testing when a chapter or topic is taught to assess the learning outcome of the students. The teacher shall award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the Internal Assessment Marks. These marks should be in no way a one-time assessment.

2. Assignments – 5 Marks

The teacher shall give assignment judiciously spread over the whole academic year. These assignments shall be evaluated and award marks according to the performance of the student in the assignment. The average marks secured from the assignment shall be added to the Internal Assessment Marks.

3. Project Work – 10 Marks

List of Projects: (This list is only exemplary and not exhaustive) (Any one)

I. Elements of Business Environment

The teachers should help the students in selecting any one element of the following:

1. Changes witnessed over the last few years on mode of packaging and its economic impact. The teacher may guide the students to identify the following changes:
   a) The changes in transportation of fruits and vegetables such as cardboard crates being used in place of wooden crates, etc. Reasons for above changes
   b) Milk being supplied in glass bottles, later in plastic bags and now in tetra-pack and through vending machines
   c) Plastic furniture [doors and stools] gaining preference over wooden furniture
   d) The origin of cardboard and the various stages of changes and growth
   e) Brown paper bags packing to recycled paper bags to plastic bags and cloth bags
   f) Re use of packaging [bottles, jars and tins] to attract customers for their products
   g) The concept of pyramid packaging for milk
   h) Cost being borne by the consumer/manufacturer
   i) Packaging used as means of advertisements.

2. The reasons behind changes in the following: Coca – Cola and Fanta in the seventies to Thums up and Campa Cola in the eighties to Pepsi and Coke in nineties. The teacher may guide the students to the times when India sold Coca Cola and Fanta which were being manufactured in India by the foreign companies.

   The students may be asked to enquire about:

   a) Reasons of stopping the manufacturing of the above mentioned drinks in India THEN
   b) The introduction of Thums up and Campa cola range
   c) Re entry of Coke and introduction of Pepsi in the Indian market
   d) Factors responsible for the change
   e) Other linkages with the above
   f) Leading brands and the company having the highest market share
   g) Different local brands venturing in the Indian market
   h) The rating of the above brands in the market
   i) The survival and reasons of failure in competition with the international brands
   j) Other observations made by the students

The teacher may develop the following on the above lines

3. Changing role of the women in the past 25 years relating to joint families, nuclear families, women as a bread earner of the family, changes in the requirement trend of mixers, washing machines, micro wave and standard of living.
4. The changes in the pattern of import and export of different Products.
5. The trend in the changing interest rates and their effect on savings.
6. A study on child labour laws, its implementation and consequences.
7. The state of 'anti plastic campaign,' the law, its effects and implementation.
8. The laws of mining /setting up of industries, rules and regulations, licences required for running that business.
9. Social factors affecting acceptance and rejection of an identified product. (Dish washer, Atta maker, etc)
10. What has the effect of change in environment on the types of goods and services? The students can take examples like:
    a) Washing machines, micro waves, mixers and grinder.
    b) Need for crèche, day care centre for young and old.
    c) Ready to eat food, eating food outside, and tiffin centres.
11. Change in the man-machine ratio with technological advances resulting in change of cost structure.
12. Effect of changes in technological environment on the behaviour of employee.

II. Principles of Management

The students are required to visit any one of the following:

1. A departmental store.
2. An Industrial unit.
3. A fast food outlet.
4. Any other organisation approved by the teacher.

They are required to observe the application of the general Principles of management advocated by Fayol:

1. 1. Division of work.
   2. Unity of command.
   3. Unity of direction.
   4. Scalar chain
   5. Espirit de corps

6. Fair remuneration to all
7. Order
8. Equity
9. Discipline
10. Subordination of individual interest to general interest
11. Initiative
12. Centralisation and decentralisation
13. Stability of tenure. **OR**

They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited.

Scientific techniques of management:

1. Functional foremanship
2. Standardisation and simplification of work
3. Method study
4. Motion Study
5. Time Study
6. Fatigue Study
7. Differential piece rate plan.

Tips to the teacher:

i. The teacher may organize this visit
ii. The teacher should facilitate the students to identify any unit of their choice and guide them to identify the principles that are being followed
iii. Similarly they should guide the students to identify the techniques of scientific management implemented in the organisation
iv. It may be done as a group activity
v. The observations could be on the basis of The different stages of division of work resulting to specialisation. Following instructions and accountability of subordinates to higher authorities. Visibility of order and equity in the unit. Balance of authority and responsibility. Communication levels and pattern in the organisation. Methods and techniques followed by the organisation for unity of direction and coordination amongst all. Methods of wage payments followed. The arrangements of fatigue study, Derivation of time study. Derivation and advantages of method study. Organisational chart of functional foremanship, Any other identified in the organisation
vi. It is advised that students should be motivated to pick up different areas of visit. A presentation of different areas in the class would help in better understanding to the other students.
vii. The students may be encouraged to develop worksheets. Teachers should help students to prepare observation tools to be used for undertaking the project: Examples, worksheets, questionnaire, interviews and organisational chart etc.

III. Marketing

1. 1. Air conditioners
   2. Baby diapers
   3. Bathing Soap
   4. Bike
   5. Blanket
   6. Bread
   7. Camera
   8. Car

9. Chocolate
10. Coffee
11. Cycle
12. DTH
13. Fans
14. Furniture
15. Mobile
16. Newspaper
17. Noodles
18. Pen drive
19. Salt
20. Shoes
21. Squashes
22. Tea
23. Washing powder

Any more as suggested by the teacher.

The teacher must ensure that the identified product should not be items whose consumption/use is discouraged by the society and government like alcohol products/pan masala and tobacco products, etc.

Identify one product/service from the above which the students may like to manufacture/provide [pre-assumption].

Now the students are required to make a project on the identified product/service keeping in mind the following:

1. Why have they selected this product/service?
2. Find out '5' competitive brands that exist in the market.
3. What permission and licences would be required to make the product?
4. What are your competitors Unique Selling Proposition.[U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tag line.
11. What is the selling price of your competitor's product?
    i. Selling price to consumer
    ii. Selling price to retailer
    iii. Selling price to wholesaler

What is the profit margin in percentage to the Manufacturer, Wholesaler or Retailer.

12. How will your product be packaged?
13. Which channel of distribution are you going to use? Give reasons for selection?
14. Decisions related to warehousing, state reasons.
15. What is going to be your selling price?
    i. To consumer
    ii. To retailer
    iii. To wholesaler
16. List 5 ways of promoting your product.
17. Any schemes for
    i. The wholesaler
    ii. The retailer
    iii. The consumer

18. What is going to be your 'U.S.P?
19. What means of transport you will use and why?
20. Draft a social message for the label.
21. What cost effective techniques will you follow for your product?
22. What cost effective techniques will you follow for your promotion plan. At this stage the students will realise the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing. Product, Place, Price and Promotion

On the basis of the work done by the students the project report should include the following:

1. Type of product /service identified and the (consumer/industries) process involve there in
2. Brand name and the product
3. Range of the product
4. Identification mark or logo
5. Tagline
6. Labeling and packaging
7. Price of the product and basis of price fixation
8. Selected channels of distribution and reasons thereof
9. Decisions related to transportation and warehousing. State reasons
10. Promotional techniques used and starting reasons for deciding the particular technique
11. Grading and standardization

ASSESSMENT

Allocation of Marks = 10 Marks

The marks will be allocated under the following heads:

1	Initiative, cooperativen ess and participation	1 Mark
2	Creativity in presentation	1 Mark
3	Content, observation and research work	2 marks
4	Analysis of situations	2 marks
5	Viva	4 marks
	Total	**10 marks**

Note: The Internal is compulsory and has to be done by all the students.
The minimum pass criteria for the Internal shall be 6 (six) marks out of 20 (twenty) marks
No question paper for Internal will be set by the Board. It is purely internal and the institution must ensure that the internal and project works specified in the syllabus are done.

Prescribed Textbook:

Textbook of Business Studies Class XII - S. Chand and Company Limited

By: V. Wason

ENTREPRENEURSHIP

Objectives:

- Acquiring Entrepreneurial spirit and resourcefulness.
- Familiarization with various uses of human resource for earning dignified means of living.
- Understanding the concept and process of entrepreneurship - its contribution in and role in the growth and development of individual and the nation.
- Acquiring entrepreneurial quality, competency and motivation.
- Learning the process and skills of creation and management of entrepreneurial venture.

DESIGN OF QUESTION PAPER
ENTREPRENEURSHIP

Weightage to different forms of questions:

Sl.no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	6	6
2.	SA	3	5	15
3.	LA-I	5	5	25
4.	LA-II	8	3	24
	Total		**19**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficult	20	14

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
1.	Reading	-	-	5 minutes
2.	VSA	10-20 words	2 minutes	12 minutes
3.	SA	40-70 words	6 minutes	30 minutes
4.	LA-I	80-100 words	12 minutes	60 minutes
5.	LA-II	180-240 words	21 minutes	63 minutes
6.	Revision	-	-	10 minutes
			Total time	**180 minutes**

Scheme of options:

There will be no overall choice. However, internal choice shall be provided in:

i. 5(five) questions of 5 marks each.

ii. 3(three) questions of 8 marks each.

ENTREPRENEURSHIP
CLASS–XI

Unit-Wise weightage

Part A: External **Time: 3 hrs** **Marks: 70**

	Units	Marks
I.	Entrepreneurship - What, Why and How	06
II.	An Entrepreneur	09
III.	Entrepreneurial Journey	10
IV.	Entrepreneurship as Innovation and Problem Solving	10
V.	Understanding the Market	15
VI.	Business Arithmetic	10
VII.	Resource Mobilization	10
	Total:	**70**
Part B : Internal - Project Work		**30**
	Grand Total:	**100**

Part A: External **70 marks/ 180 periods**

Unit I: Entrepreneurship - What, Why and How **06 marks/ 15 periods**

- Entrepreneurship – Concept, Functions, Need and Importance
- Why Entrepreneurship For You?
- Myths about Entrepreneurship
- Pros and Cons of Entrepreneurship
- Process of Entrepreneurship
- Startup and its stages
- Entrepreneurship – The Indian Scenario

Unit II: An Entrepreneur **09 marks/ 25 periods**

- Why be an Entrepreneur?
- Types of Entrepreneurs
- Competencies and characteristics: Ethical Entrepreneurship
- Entrepreneurial Values, Attitudes and Motivation
- Mindset of an employee and an entrepreneur difference
- Intrapreneur: Importance in any organisation

Unit III: Entrepreneurship Journey **10 marks/ 25 periods**

- Self-Assessment of Qualities, Skills, Resources and Dreams.
- Generation of Ideas.
- Business Ideas vs. Business Opportunities
- Opportunity Assessment – Factors, Micro and Macro Market Environment
- Feasibility Study
- Business Plan Preparation
- Execution of Business Plan
- Role of networking in entrepreneurship

Unit IV: Entrepreneurship as Innovation and Problem Solving **10 marks/ 25 periods**

- Entrepreneurs - as problem solvers.
- Innovations and Entrepreneurial Ventures – Global and Indian
- New Industries of New Age Economy
- Role of Technology – E-commerce and Social Media
- Social Entrepreneurship as Problem Solving-Concept and Importance
- Risk Taking-Concept; types of business risks

Unit V: Understanding the Market **15 marks/ 40 periods**

- Business Idea and Concept
- Types of Business: Manufacturing, Trading and Services.
- Stakeholders: sellers, vendors and consumers and Competitors
- Market Research - Concept, Importance and Process
- Market Sensing and Testing
- Business Model
- Proof of Concept
- Pricing and Factors affecting pricing.
- Launch Strategies after pricing and proof of concept

Unit VI: Business Arithmetic **10 marks/ 25 periods**

- Unit of Sale, Unit Price and Unit Cost – for single product or service
- Types of Costs - Start up, Variable and Fixed
- Income Statement
- Cashflow Projections
- Break Even Analysis - for single product or service
- Taxes
- Financial Business Case Study

Unit VII: Resource Mobilization **10 marks/ 25 periods**

- Types of Resources - Human, Capital and Entrepreneurial tools and resources
- Selection and utilization of human resources and professionals like Accountants, Lawyers, Auditors, Board Members, etc.
- Role and Importance of a Mentor
- Estimating Financial Resources required.
- Methods of meeting the financial requirements – Debt vs. Equity
- Size and capital based classification of business enterprises.
- Various sources of Information
- Incubators and Accelerators

Part B : Internal **30 marks**

Project Work (Any Three)

1) Visit and report of DIC
2) Case Study
3) Field Visit
4) Learn to earn
5) Know thy state handicraft

SUGGESTED ALTERNATIVE PROJECT FOR CLASS XI

Know thy State Handicraft

Introduction

The Entrepreneurship students of Class XI will be given this opportunity to understand the ethnic and traditional handicraft work of every state.

Detailed below are complete guidelines to proceed with the project and the expected outcome thereof.

Objective

- To find the out the traditional handicraft of every state.
- To understand the intricacy involved in the traditional handicraft work.
- To find out the reasons for success/failure of the handicraft.
- To find out innovative ways in which the product could be enhanced to be made more popular.
- To look into various ways to market the handicraft.

- To make entrepreneurship seem do-able.
- To excite the students about entrepreneurship.
- To understand business concepts - planning, organizing, staffing, marketing.
- Survey and analyze the market to understand customer needs.
- To understand the importance of earning/profits.
- To understand the importance of sales and turnover.
- Value the craft, appreciate and respect the effort put into generating it.

Process

- Given below are a list of states: Arunachal Pradesh, Mizoram, Manipur, Sikkim, Nagaland, Assam, Meghalaya, Jharkhand, Jammu and Kashmir, Chattisgarh, Telengana, Uttrakhand or any other state.
- The Class will be divided into groups of 2/3 members each depending on the class strength.
- Student groups to select a particular state.
- Let the groups, research and find out the traditional handicrafts of that particular state.
- Make a list of all the traditional present in that state.
- Select one particular handicraft **which is not very popular amongst people**.
- Give a complete history of the handicraft-raw materials needed for it, process of making it, number of years since when this handicraft is being done.
- If there is emporium of that particular state in your city, then encourage students to visit the emporium to get a firsthand experience in looking into the product as well as if possible they can interview the manager/craftsman present in the showroom to know more about the handicraft.
- Suggest an innovative way to popularize the product - for e.g.
  1. it can an innovative way to enhance the values of the product itself,
  2. innovative ways to market the product.

Expected Learning Outcomes from the Project

- Presence of mind
- Crisis management/Risk Management - you must take advance from your clients beforehand
- Team work
- Various options to start a business venture
- Quality of the product matters much in the market
- Understanding the needs of the customer
- Any idea can be innovative if its in accordance to people's need
- Marketing strategies

Project Report

- Students need to submit a detailed report according to the guidelines mentioned below:
- Introduction - State chosen, reasons for selecting that state
- List of handicrafts in that state
- Selection of a particular handicraft-process, craftsman involved in it, photographs of the process, if possible attach sample of the work
- If possible interview with the craftsman
- Innovative suggestion to enhance the value of the product.

Note: Project work is compulsory and has to be done by all students. The minimum pass criteria for the project work shall be 12(twelve) marks out of 30(thirty) marks. No question paper for project work will be set by the Board. It is purely internal and the institution must ensure that the project works specified in the syllabus are done. The marks of the project work must be sent to the Board with the theory marks.

Prescribed textbook:

Entrepreneurship Class XI - V.K.Global Publications Pvt. Ltd.
By Poonam Gandhi

ENTREPRENEURSHIP
CLASS–XII

Unit-Wise weightage

Part A: External **Time: 3 hrs** **Marks: 70**

	Units	Marks
I.	Entrepreneurial Opportunities	15
II.	Entrepreneurial Planning	15
III.	Enterprise Marketing	15
IV.	Enterprise Growth Strategies	05
V.	Business Arithmetic	15
VI.	Resource Mobilization	05
	Total:	**70**
Part B : Internal - Project Work		**30**
I. Project Report/ Market Survey Report		10 Marks
II. Viva voce on PR/ MSR		5 Marks
III. Case Study		10 Marks
IV. Problem Solving		5 Marks
	Grand Total:	**100**

Part A: External **70 marks/ 180 periods**

Unit I: Entrepreneurial Opportunities **15 marks/ 40 periods**

- Sensing Entrepreneurial Opportunities
- Environment Scanning
- Problem Identification
- Spotting Trends
- Creativity and Innovation
- Selecting the Right Opportunity

Unit II: Entrepreneurial Planning **15 marks/ 40 periods**

- Forms of Business Entities – Sole proprietorship,
- Joint Stock Company – Meaning characteristics and suitability
- Business Plan
- Organisational plan
- Operational plan and production plan
- Financial plan
- Marketing Plan
- Human Resource Planning
- Formalities for starting a business

Unit III: Enterprise Marketing **15 marks/ 40 periods**

- Goals of Business; Goal Setting. SMART Goals
- Marketing and Sales strategy
- Branding - Business name, logo, tag line
- Promotion strategy
- Negotiations - Importance and methods
- Customer Relations
- Vendor Management
- Business Failure - Reasons

Unit IV: Enterprise Growth Strategies **05 marks/ 10 periods**

- Franchising
- Merger and Acquisition
- Value Chain and Value Addition

Unit V: Business Arithmetic **15 marks/ 40 periods**

Business Arithmetic

- Unit of Sale, Unit Cost for multiple products or services
- Break even Analysis for multiple products or services
- Importance and use of cash flow projections
- Budgeting and managing the finances
- Computation of working capital
- Inventory control and EOQ
- Return on Investment (ROI) and Return on Equity (ROE)

Unit VI: Resource Mobilization **05 marks/ 10 periods**

Resource Mobilization

- Angel Investor
- Venture Capital Funds
- Stock Market – raising funds
- Specialized Financial Institutions - Meaning and objectives

Part B : Internal **30 marks**

Project Work

Introduction:

The main objective of the course in Entrepreneurship is to generate in the students initiative, self-reliance and enthusiasm so as to empower them to become entrepreneurs both in spirit and performance. A number of skills such as observation, evaluation, communication, resource mobilization and management, risk assessment, team building etc. are also to be developed in the students. Leadership qualities, sensitivity to business ethics and adherence to a positive value system are the core issues that the course highlights while presenting different concepts related to entrepreneurship. Such a course should necessarily have a strong experimental component in the form of practical work. The objectives of the practical work are:

1. to introduce the students to the world of business by developing in them the core skills and competencies required for an entrepreneur.
2. to develop in the students qualities such as leadership, self-confidence, initiative, facing uncertainities, commitment, creativity, people and team building, integrity and reliability.
3. to enable the students to acquire the skills and knowledge needed for conducting surveys, collecting, recording and interpreting data and preparing simple estimates of demand for products.
4. to guide the students to prepare a Project Report.
5. to equip the students with knowledge and skills needed to plan and manage an enterprise through case studies conducted and recorded by the students in different fields such as resource assessment, market dynamics, finance management, cost determination, calculation of profit and loss etc.
6. to instill in the students important values and entrepreneurial discipline.

FORMAT **Total marks: 30**

1.	Project Report/ Market Survey Report	10 marks
2.	Viva-Voce on PR /MSR	5 marks
3.	Case Study	10 marks
4.	Problem Solving	5 marks

1. Project Report/Market Survey Report **10 marks**

a) Project Report

Preparation of a Project Report for an enterprise involving in manufacture of products.

Students may be provided adequate guidance to choose a project based on their interests and availability of information and authentic inputs in the locality. The Project Report shall include product description, production and general evaluation of prospects, Market aspects, production requirements, capital requirements ie., fixed assets & working capital, raw materials & allied

supplies, man power (annual), other cost (annual), total annual cost, sales revenue and net profits. Further, the students will be required to appear for a Viva-voce on the basis of their projects, sufficient care should be taken by the students to prepare the report after studying the various aspects involved thoroughly. In a nutshell, the project report should lead to viable enterprise.

b) Market Survey Report

Market research is the process and technique of finding out who your potential customers are and what they want. The survey may be on products and services already available in the market or students may also conduct surveys for new products and services. The report of the survey should be organised under the following broad headings:

1. Objectives.
2. Methods and tools (interviews, questionnaires etc.) to be used to collect information.
3. Records of data and information.
4. Analysis of data and information.
5. Interpretation and conclusion.

For example, a survey may be conducted to find out the choice of households in toiletry soap, tooth paste etc. The data may be analysed to establish a pattern that may be useful to an entrepreneur.

Guidelines for assessment of Project Report / Market Survey Report

1. Presentation: Format, Clarity, Use of graphs, tables and other visuals, organisation, methodical recording of data and information and general neatness of execution. **5 marks**
2. Originality and Creativity. **3 marks**
3. Authenticity of information and correctness of calculations and general feasibility of the project/ sustainability of conclusion drawn in the survey**.** **2 marks**

2. Viva Voce on the Project Report /Market Survey Report 5 marks

The questions should establish that the report is the original work of the student and that the student has a reasonably clear understanding of the work carried out by him/her. Entrepreneurial qualities such as leadership, self-belief, creativity, originality, initiative etc. may also be assessed by asking a variety of questions related to the report.

3. Case Study 10 marks

A case study is a focused research on an organization, enterprise, practice, behaviour or person undertaken to highlight an aspect that the study attempts to examine. For instance, a case study may be conducted on the pollution control methods being employed by an industry or a successful industrialist may be chosen as a subject of a case study to analyze and understand the strategies that the industrialist adopted to achieve success. Ideally, a case study should be conducted on subjects with the objectives of bringing to the fore beliefs, practices, strategies, values etc. that have made them what they are. Such studies help us to understand the way in which great minds think and operate. We may also conduct case studies on failures; why a company collapsed, how a service lost its market etc. From both the types of case study, we learn lessons; how to do something or how not to do something. They also provide valuable insight into the processes involved in an enterprise.

A few topics are suggested for carrying out case studies:

i) Drawing a profile of a successful entrepreneur.
ii) Studying a public sector undertaking and highlighting its success/failure, by analyzing the factors responsible.
iii) Studying a small scale unit in the locality to bring out the procedures and processes adopted by the unit to become a feasible business venture.
iv) A study of competition in business by choosing two or more rivals in the market and analyzing their strengths and weaknesses.

v) Take the school itself for a case study and analyze any two aspects of the school plant for chalking out a plan of action: infrastructure, academics, co-curricular activities etc.
vi) A case study on a thriving fast food shop/restaurant in your locality. What makes it so popular?
vii) A case study on the ways in which a business unit has mobilized its financial resources.
viii) A case study on the enterprise management techniques adopted by a business house.
ix) A case study on the marketing strategies of a successful consumer durable company.
x) A case study on any Specialized Institution that supports and guides the establishment of a small scale unit.
xi) Carrying out a case study on an established industrial house/company to find out the value system of the company and how it fulfills its social commitment/obligations.
xii) Study your school/college as an organization. Suggest strategies for development.
xiii) Study a business unit that has achieved remarkable growth. Analyse the different strategies adopted by the company to achieve growth.
xiv) Carrying out a case study on an established industry to ascertain the processes followed to reduce/prevent pollution.
xv) Study on environment friendly companies and their contribution to preservation.

Assessment of Case Studies

i) Presentation: Format, accuracy, clarity, authenticity and general neatness. **7 marks**
ii) Analysis and Conclusions. **3 marks**

4. Problem Solving **5 marks**

In this session, the students will be required to solve a problem in the form of a written test. The examiner may choose any problem related to the units in class XII text book and set it for the class. The problem may be in the following areas:

a) How to scan the environment to establish the feasibility of a project?
b) Given certain figures showing the consumption pattern of a product, drawing conclusions that have a bearing on similar products.
c) Carrying out market assessment for a given product/service to ascertain the feasibility factor.
d) Assessment of working capital.
e) Calculation of total cost of production.
f) Calculation of break-even point.
g) Determining location of a manufacturing unit.
h) Problems in inventory control (calculation of the Economic Order Quantity and carrying out ABC analysis).

Assessment of Answers

The examiner may prepare five problems which are solved by him/her before they are presented to the students. The student may choose any one of the problems and solve it, showing the different steps/different reasons involved in the solution. If the problem does not involve actual calculations, it may not have anyone correct answer. So weightage should be given not only to the final answer but to the entire process of problem solving that the student has followed. Originality and innovative spirit should be rewarded. Where definite formulas are involved, accuracy should be given due weightage.

Note: Project work is compulsory and has to be done by all students. The minimum pass criteria for the project work shall be 12 (twelve) marks out of 30 (thirty) marks.
No question paper for project work will be set by the Board. It is purely internal and the institution must ensure that the project works specified in the syllabus are done.

Prescribed textbook :

Entrepreneurship Class XII - VK Global Publications Pvt.Ltd
by Poonam Ghandhi

FUNDAMENTALS OF BUSINESS MATHEMATICS

Objectives:

The objectives of studying Fundamentals of Business Mathematics at Higher Secondary stage intend to help the students to:

- Acquire knowledge and critical understanding of basic facts, concepts, terms, principles, symbols, formulae and mastery of underlying processes and skills.
- Develop the ability to apply the knowledge and skills to solve problem.
- Develop positive attitude to think, analyze and articulate logically.
- Foster acquisition of the skill of
  (a) computation
  (b) drawing geometrical figure and graph.
- Develop interest in the subject by participating in related competitions.
- Develop necessary skills to work with modern technological devices such as calculators and computers.

DESIGN OF QUESTION PAPER
FUNDAMENTALS OF BUSINESS MATHEMATICS

Weightage to different forms of questions:

Sl.no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	VSA	1	5	5
2.	SA	4	9	36
3.	LA-I	5	3	15
4.	LA-II	6	4	24
	Total		**21**	**80**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	16
2.	Average	60	48
3.	Difficult	20	16

The expected time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected time for each question	Total expected time
1.	Reading	-	5 minutes
2.	VSA	3 minutes	15 minutes
3.	SA	8 minutes	72 minutes
4.	LA – I	10 minutes	30 minutes
5.	LA – II	12 minutes	48 minutes
6.	Revision	-	10 minutes
		Total time	**180 minutes**

Scheme of Options:

There will be no overall choice. However, internal choice shall be provided in:

i. 4(four) questions of 4 marks each
ii. 3(three) questions of 5 marks each
iii. 4(four) questions of 6 marks each.

CLASS - XI
FUNDAMENTALS OF BUSINESS MATHEMATICS

Unit-Wise weightage
External **Time: 3 hrs** **Marks: 80**

Units		*Marks*
PART A: BUSINESS MATHEMATICS		
I.	Indices and Surds	15
II.	Co-ordinate Geometry	07
III.	Logarithms	06
IV.	Permutations	08
V.	Combinations	04
PART B: COMMERCIAL ARITH METIC		
VI.	Simplification	07
VII.	Simple Interest	09
VIII.	Compound Interest	06
IX.	Proportional Parts and Percentages	08
X.	Profit and Loss	10
	Total	**80**
Internal		**20**
	Grand Total	**100**

PART A : BUSINESS MATHEMATICS

Unit I: Indices and Surds **15 marks/ 24 periods**

Indices-Definition, Laws of Indices, Surds - Definition, Similar Surds, Rationalisation, Quadratic, Mixed Surds and their properties.

Unit II: Co-ordinate Geometry **07 marks/ 18 periods**

Slope/gradients of a straight line , Equation of a straight line, Applied problems in business, Equation of a circle (standard form/general form),radius and centre of a circle.

Unit III: Logarithms **06 marks/ 16 periods**

Introduction – meaning and definitions, properties of logarithms, systems of logarithm, characteristics and mantissa, determination of characteristic, mantissa, reading a log table, anti-logarithm, how to study anti-logarithm table.

Unit IV: Permutations **08 marks/ 20 periods**

Fundamental principle of counting, factorial notation, permutation as an arrangement, meaning P(n, r). Application of permutation.

Unit V: Combinations **04 marks/ 10 periods**

Definition of combination, meaning of C(n,r), Applications of combinations.

PART B: COMMERCIAL ARITHMETIC

Unit VI: Simplification **07 marks/ 18 periods**

Simplification, square root, approximation, error in calculation-absolute, relative and percentage errors.

Unit VII: Simple Interest **09 marks/ 20 periods**

Meaning of interest, simple interest, installment buying.

Unit VIII: Compound Interest **06 marks/ 16 periods**

Definition of compound interest, growth and decay (depreciation), applied logarithm.

Unit IX: Proportional Parts and Percentages **08 marks/ 18 periods**

Principle of division into proportional parts and related problems, meaning of percentages, rules of percentages and applied problems in business.

Unit X: Profit and Loss **10 marks/ 20 periods**

Meaning of profit and loss, certain relevant terms viz. selling price, cost price, marked price, wholesale price, retail price, turn over. Types of discount-cash discount, trade discount and successive discount.

Part B: Internal **20 marks**

Areas of Assessment

I. Periodical Formal Testing		**–**	**10 marks**
II. Assignments		**–**	**5 marks**
III. Project Work		**–**	**5 marks**
	Total	**–**	**20 marks**

Guidelines for Assessment

I. Periodical Formal Testing – 10 marks

Teacher shall conduct periodical formal testing from time to time to assess the progress of the students. The teacher shall evaluate the test, award marks and maintain records on the progress of the students. The average marks secured from the test during the academic session shall be added to the internal assessment marks. This marks should be in no way a onetime mark.

II. Assignments - 5 marks

Teacher shall give at least four assignment from Indices and Surds, Logarithms, Permutations, Simplification and Simple Interest. These assignments shall be evaluated and award marks according to the performance of the student in the assignment. The average marks secured from the assignment shall be added to the Internal Assessment marks.

III. Project work - 5 marks

The project work is compulsory and has to be done by all the students Teacher shall give at least four Project work from Co-ordinate Geometry, Combination, Compound Interest, Proportional Parts and Percentages and Profit and Loss. Teacher can give different project work to different students.

Note:- Internal Assessment is compulsory and has to be done by all students. The minimum pass criteria for Internal Assessment shall be six (6) marks out of twenty (20) marks.

CLASS - XII
FUNDAMENTALS OF BUSINESS MATHEMATICS

Unit wise Weightage

External **Time-3 hrs** **Marks-80**

Units		Marks
PART A: BUSINESS MATHEMATICS		
I.	Sets	07
II.	Relations and Functions	08
III.	Determinants	09
IV.	Matrices	08
V.	Adjoint and Inverse of a Matrix	08
PART B: COMMERCIAL ARITHMETIC		
VI.	Partnership	07
VII.	Bill of Exchange and Average Due Date	08
VIII.	Stocks and Shares	09
IX.	Linear Programming	07
X.	Mixture or Alligation	09
	Total	***80***
Internal		**20**
	Grand Total	***100***

PART A: BUSINESS MATHEMATICS

Unit I: Sets **07 marks/ 16 periods**

Introduction-meaning, elements of a set, description of a set, types of a set, finite and infinite sets, empty sets, equality of sets, equivalent sets, sub-sets, family of sets, power sets, universal sets, venn diagram, complement of sets, operations on sets(union, intersection and difference of two sets), application of sets.

Unit II: Relations and Functions **08 marks/ 20 periods**

Definition of relation, domain and range of a relation, functions-its meaning and definition, notation of function, image and pre image of a function, domain and range of a function, characteristics of a function, equality of function, into and onto function, one-one into and one-one onto functions, many–one into function.

Unit III: Determinants **09 marks/ 22 periods**

Determinants of second order, third order, expansion of determinants, sarrus diagram, minor, some properties of determinants, solution of linear equations, Crammer's rule. Applied problems in business.

Unit IV: Matrices **08 marks/ 17 periods**

Meaning-types of matrices, algebra of matrices, equality of matrices, addition and subtraction of matrices, multiplication of matrix by scalar, multiplication of matrices, transpose of a matrix, symmetric matrix, determinants of a square matrix, minor, co-factor.

Unit V: Adjoint & Inverse of a Matrix **08 marks/ 17 periods**

Adjoint of a square matrix, inverse of a matrix, applications of matrix, solution of linear equations, applications to business problems.

PART B: COMMERCIAL ARITHMETIC

Unit VI: Partnership **07 marks/ 16 periods**

Investment of capital for unequal period, sharing profit, partner's salaries, interest on capital, profit sharing on the admission of a new partner/ retirement of an existing partner.

Unit VII: Bill of Exchange and Average Due Date 08 marks / 20 periods

Meaning of bill of exchange, promissory note, true discount, banker's discount, present value, bill value, banker's gain, discounted value. Meaning of average due date, calculation of average due date; when the amount is lent in one instalment and the repayment is sought in several instalments.

Unit VIII: Stock and Shares 09 marks/ 18 periods

Meaning and nature of shares, meaning and nature of stock, dividend and yield, ex-dividend and cum-dividend price, brokerage.

Unit IX: Linear Programming 07 marks/ 18 periods

Introduction –linear inequations in two variables and their graphs, solution set of a system of linear inequations, meaning of linear programming and its importance, objectives, function, optimization, limitations of linear programming, application areas of linear programming, different types of linear programming problems (L.P.P), mathematical formulation of linear programming problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimum feasible solution.

Unit X: Mixture or Alligation 09 marks/ 16 periods

Meaning of mixture or alligation, mixture of three or more ingredients.

Part B: Internal 20 marks

Areas of Assessment

I. Periodical Formal Testing	**-**	**10 marks**
II. Assignments	**-**	**5 marks**
III. Project work	**-**	**5 marks**
Total	**-**	**20 marks**

I. Periodical Formal Testing 10 marks

Teacher shall conduct periodical formal testing from time to time to assess the progress of the students The teacher shall evaluate the test and award marks and maintain records on the progress of the students The average marks secured from the test during the academic session shall be added to the internal assessment marks. This mark should be in no way a onetime mark.

II. Assignments 5 marks

Teacher shall give at least four assignments from Sets, Relations and Functions, Partnership, Bill of Exchange and Average Due Date and Mixture or Alligations. These assignments shall be evaluated and award marks according to the performance of the students in the assignment. The average marks secured from the assignments shall be added to the Internal Assessment marks.

III. Project work 5 marks

The project work is compulsory and has to be done by all the students. The teacher shall give at least four projects from Determinants, Matrix, Stocks and Shares, Adjoint and Inverse of a Matrix and Linear Programming. Teacher can give different project work to different students.

Note:- Internal Assessment is compulsory and has to be done by all students.
The minimum pass criteria for internal Assessment shall be six (6) marks out of twenty (20) marks.

Prescribed textbook:
Fundamentals of Business Mathematics Class XII - Amiya Prakashani
by Ranjit Paul
Aashirwad, Lenin
Sarani, D. B. Para,
Siliguri, West Bengal.

FINANCIAL MARKETS MANAGEMENT

Objectives:

- To familiarize the students with the roles of financial markets and types of markets.
- To develop and understand about Financial Statement Analysis.
- To familiarize the students with the concept of Mutual Funds.
- To acquaint the students with different types of funds, Gold ETFs, debt funds and liquid funds.
- To familiarize students with the concept of taxation and regulations.
- To familiarize the students with the Indian securities markets and trading members.
- To familiarize the students with the trading system, process of clearing, settlement and legal framework.
- To familiarize the students with the concepts of Derivatives, Futures and Options.
- To enable the students to appreciate and understand the reasons why financial markets are needed in a well functioning economy.

DESIGN OF QUESTION PAPER
FINANCIAL MARKETS MANAGEMENT

Weightage to different forms of questions:

Sl. No.	Forms of Questions	Marks for each question	No. of questions	Total marks
1.	Very short answer (VSA)	1	8	8
2.	Short answer (SA-I)	2	5	10
3.	Short answer (SA-II)	4	7	28
4.	Long answer (LA)	6	4	24
	Total -		**24**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficulty	20	14

The expected length of answer and time to be taken to answer the questions:

Sl.no.	Forms of questions	Expected length	Expected time for each question	Total expected time
	Reading			5 minutes
1.	VSA	10-20 words	2 minutes	16 minutes
2.	SA - I	20-40 words	3 minutes	15 minutes
3.	SA - II	60-80 words	10 minutes	70 minutes
4.	LA	100-120 words	16 minutes	64 minutes
	Revision			10 minutes
			Total time -	**180 minutes**

Scheme of options:

There will be no overall choice. However, internal choice shall be provided in 6 marks questions.

CLASS-XI
FINANCIAL MARKETS MANAGEMENT

Unit-wise weightage
PART – A: External **Time: 3 Hrs.** **Marks: 70**

Units		**Marks**
I.	Markets and Financial Instruments	5
II.	Primary and Secondary Market	15
III.	Financial Statement Analysis	15
IV.	Mutual Funds Products and Features	15
V.	ETFs, Debt and Liquid Funds	15
VI.	Taxation and Regulation	5
	Total	**70**
PART – B: Internal (Practical)		**30**
	Grand Total	**100**

PART – A: External **70 marks/180 periods**

Unit I: Markets and Financial Instruments **5 marks/10 periods**

Meaning of Investment, Various options available for investment, Meaning of Stock Exchange, Depository, Securities, Regulator, Participants.

Unit II: Primary and Secondary Market **15 marks/40 periods**

Role of the Primary Market: Issue of Shares, Concepts of Issue price, Initial Public Offer (IPO), Prospectus, Listing of Securities, SEBI's Role in an Issue, Foreign Capital Issuance: Introduction to Secondary Market: Stock Exchange, Depository - How is a depository similar to a bank? Depositories in India: Stock Trading. Precautions before investing in the stock markets.

Products in the Secondary Markets - Equity Investment, Debt Investment, Miscellaneous - Corporate Actions, Index, Clearing & Settlement and Redressal, What is a Book-closure/Record date? Recourses available to investor/client for redressing grievances. Meaning of Arbitration, Investor Protection Fund. What is SEBI SCORES?

Unit III: Financial Statement Analysis **15 marks/40 periods**

Concepts & Modes of Analysis: Simple Interest, Compound Interest. What is meant by the Time Value of Money? How to go about systematically analysing a company?

Ratio Analysis - Liquidity Ratios, Leverage/Capital Structure Ratios, Profitability Ratios.

Unit IV: Mutual Funds Products and Features **15 marks/40 periods**

Mutual Funds - Who Manages Investor's Money? Who is a Custodian? Role of the AMC. What is an NFO? Role of a registrar and transfer agents, Procedure for investing in an NFO, Investor's rights & obligations, Different schemes offered by Mutual Funds.

Category wise funds, Open Ended and Close Ended Funds, Equity Oriented Funds, Index Fund, Diversified Large Cap Funds, Midcap Funds, Sectoral Funds. Other Funds - Arbitrage Funds, Multicap Funds, Quant Funds, International Equities Fund, Growth Schemes, ELSS, Fund of Funds.

Importance of basic offer documents (SID and SAI), Meaning of Key Information Document, NAV, Expenses incurred in relation to a scheme, What is Expense Ratio and Portfolio Turnover? How does AUM affect portfolio turnover? How to analyse cash level in portfolios? What are exit loads?

Unit V: ETFs, Debt and Liquid Funds 15 marks/40 periods

Introduction to Exchange Traded Fund, Salient Features, Concepts of REITS, Gold ETF, Sovereign Gold Bonds - Product Details of Sovereign Gold Bonds, Market Making by APS. Meaning of Interest Rate Risk and Credit Risk. How is a Debt Instrument Priced? Debt Mutual Fund Schemes - Fixed Maturity Plans, Capital Protection Funds, Gilt Funds, Balanced Funds, MIPs, Child Benefit Plans.

Valuation of securities, Floating rate scheme, What is portfolio churning in liquid funds? Stress testing of assets.

Unit VI: Taxation and Regulation 5 marks/10 periods

Capital gains taxation, Indexation benefit, Dividend distribution tax. Why FMPS are popular? What is the name of industry Association for the Mutual Fund Industry? Objectives of AMFI; Product labelling in mutual funds – Riskometer, Advantages of Mutual Funds. Meaning of Systematic Investment Plan (SIP), Systematic Transfer Plan (STP) and Systematic Withdrawal Plan (SWP).

Choosing between dividend payout, Dividend reinvestment and growth options- Which one is better for the investor? - Growth option, Dividend payout option, Dividend reinvestment option.

Note:

For the purpose of NSE Certification in Financial Management (NCFM) examination which will be conducted online, the Question paper will consist of 60 nos of question for 100 marks.

PART – B: PRACTICAL 30 marks/ 30 hours

Guidelines for practical:

The students will practice for a minimum of 30 hours on NSE Learn to Trade (NLT) Software on two modules. The minimum period of practice can however be increased, if it is possible to allocate more time in the schools.

Weightage of marks:

Sl.No	Name of NLT Module	Hours	Marks
1.	Numeric Speed Accelerator (NSA)	15	15
2.	Function Key Accelerator (FKA)	15	15
	Total	**30**	**30**

Note:

Practical is compulsory and has to be done by all students. The minimum pass criteria for practical shall be 12 (twelve) marks out of 30 (thirty) marks. No Question paper for practical will be set by the Board. It is purely internal and the institution must ensure that the practical with minimum required hours of practice for the modules are maintained. It is purely internal and the institution must include the practical marks with the theory marks.

Guidelines for teachers:

During the academic session, the teacher must supervise the student in the practical on the NLT software. In Numeric Speed Accelerator (NSA), the teacher shall evaluate the student on the speed and accuracy developed by the student. The students shall develop the skills in operating with numbers and basic arithmetical operators without looking at the key board.

Prescribed textbook:

Financial Markets Management – NSE Academy, National Stock Exchange of India Limited

CLASS-XII
FINANCIAL MARKETS MANAGEMENT

Unit-wise weightage

PART – A: External **Time: 3 Hrs.** **Marks: 70**

Units		Marks
I.	Introduction to Indian Securities Market and Trading Membership Primary and Secondary Market	15
II.	Trading	20
III.	Clearing, Settlement and Legal Framework	20
IV.	Introduction to Derivatives	5
V.	Introduction to Futures and Options	10
	Total	**70**
PART – B: Internal (Practical)		**30**
	Grand Total	**100**

PART – A: External **70marks/ 180 periods**

Unit : I Introduction to Indian Securities Market and Trading Membership
15 marks/ 40 periods

a) Market Segments - Primary Market, Secondary Market
b) Key Indicators of Securities Market – Index, Market Capitalisation, Market Capitalisation Ratio, Turnover, Turnover Ratio
c) Products and Participants – Products, Participants
d) Market Segments and their Products
e) Reforms in Indian Securities Markets
f) Stock Brokers
g) NSE Membership - New Membership, Eligibility Criteria for Membership at NSE, Admission Procedure for New Membership
h) Surrender of Trading membership
i) Suspension & Expulsion of Membership - Basis of Suspension of Membership, Suspension of Business, Removal of Suspension, Consequences of Suspension, Consequences of Expulsion
j) Declaration of Defaulter
k) Authorised Persons
l) Sub-Brokers – Eligibility, Registration, Cancellation of Registration
m) Broker-Clients Relations - Client Registration Documents, Unique Client Code(UCC), Margins from the Clients, Execution of Orders, Contract Note, Payments/Delivery of Securities to the Clients, Brokerage, Segregation of Bank Account, Segregation of Demat (Beneficiary)Accounts
n) Sub-Broker-Clients Relations - Relationship with clients, Contract notes, Securities/Funds
o) Investor Service Cell and Arbitration
p) Code of Advertisement

Unit : II Trading **20 marks/ 50 periods**

a) Introduction
b) NEAT System
c) Market Types

d) Trading System Users Hierarchy
e) Local Database
f) Market Phases
g) Logging On
h) Log Off / Exit from the Application
i) NEAT Screen
j) Invoking an Inquiry Screen - Market Watch, Security Descriptor, Market by Price, Previous Trades, Outstanding Orders, Activity Log, Order Status, Snap Quote, Market Movement, Market Inquiry, Auction Inquiry, Security /Portfolio List, Multiple Index Broadcast and Graph, Online Backup, Basket Trading, Buy Back Trades, Supplementary Functions,
k) Order Management - Entering Orders, Order Modification, Order Cancellation, Order Matching
l) Internet Broking
m) Co-location
n) Wireless Application Protocol (WAP)

Unit : III Clearing, Settlement and Legal Framework 20 marks/ 50 periods

a) Introduction
b) Key terminologies used in Clearing and Settlement Process
c) Transaction Cycle
d) Settlement Agencies
e) Clearing and Settlement Process - Clearing Process, Settlement Process, Settlement Cycle
f) Securities and Funds Settlement- Securities Settlement, Funds Settlement
g) Shortages Handling - Valuation Prices, Close-out Procedures
h) Risks in Settlement
i) Risk Management - Capital Adequacy Requirements, Margins, On-Line Exposure Monitoring, Off-line Monitoring, Index-based Market-wide Circuit Breakers/ Price Bands for Securities, Settlement Guarantee Mechanism
j) International Securities Identification Number
k) Data and Report Downloads - Obligation Reports, Custodial Trade Reports, Deliveries Reports, Funds Reports, Auction Reports, Other Reports
l) SEBI (Intermediaries) Regulations, 2008
m) SEBI (Prohibition of Insider Trading) Regulations, 2015 - Prohibition on Dealing, Communicating or Counselling (Chapter II), Investigation (Chapter III), Disclosures and Internal Procedure for Prevention of Insider Trading (Chapter IV)
n) SEBI (Prohibition of fraudulent and Unfair Trade Practices relating to securities market) Regulations, 2003 - Prohibition of Certain Dealings in Securities, Prohibition of Manipulative, Fraudulent and Unfair Trade Practices
o) The Depositories Act, 1996
p) Indian Contract Act, 1872
q) Income Tax Act, 1961.

Unit : IV Introduction to Derivatives 5 marks/ 15 periods

a) Types of Derivative Contracts
b) Basic Derivatives
c) History of Financial Derivatives Markets
d) Participants in a Derivative Market
e) Economic Function of the Derivative Market
f) Understanding Interest Rates
g) Understanding The Stock Index

h) Economic Significance of Index Movements
i) Index Construction
j) Desirable Attributes of An Index
k) Applications of Index

Unit : V Introduction to Futures and Options 10 marks/ 25 periods

a) Forward Contracts
b) Limitations of Forward Markets
c) Introduction to Futures
d) Distinction between Futures and Forwards Contracts
e) Futures Terminology
f) Trading Underlying Vs. Trading Single Stock Futures
g) Futures Payoffs
h) Pricing Futures
i) Understanding Beta (β)
j) Numerical Illustration of Applications of Stock Futures
k) Hedging using Stock Index Futures
l) Option Terminology
m) Comparison between Futures and Options

Note:

For the purpose of NSE Certification in Financial Management (NCFM) examination which will be conducted online, the Question paper will consist of 60 nos of question for 100 marks.

PART – B: PRACTICAL 30 marks/ 30 hours

Guidelines for practical:

The students will practice for a minimum of 30 hours on NSE Learn to Trade (NLT) Software on two modules. The minimum period of practice can however be increased, if it is possible to allocate more time in the schools.

Weightage of marks:

Sl.No	Name of NLT Module	Hours	Marks
1.	Trading Skill Accelerator (TSA)	15	15
2.	Arithmetic Skill Accelerator (ASA)	15	15
	Total	**30**	**30**

Note:

Practical is compulsory and has to be done by all students. The minimum pass criteria for practical shall be 12 (twelve) marks out of 30 (thirty) marks.

No question paper for project work will be set by the Board. It is purely internal and the institution must ensure that the project works specified in the syllabus are done. The marks of the project work must be sent to the Board in the prescribed/pre - printed form which will be supplied by the Board.

Guidelines for teachers:

During the academic session, the teacher must supervise the student in the practical on the NLT software. Trading Skill Accelerator (TSA), the teacher shall evaluate the student in the skill developed in buying/ selling of shares one at a time. In Arithmetic Skill Accelerator (ASA), the students shall develop the skills in operating with numbers and basic arithmetic.

Prescribed textbook:

Financial Markets Management – NSE Academy, National Stock Exchange of India Limited

PHYSICS

OBJECTIVES:

Emphasis on the basic conceptual understanding of the content.

- Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.
- Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promotion of process-skills, problem-solving abilities and applications of Physics concepts.
- Strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- Expose the learners to different processes used in Physics-related industrial and technological applications.
- Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- Promote problem solving abilities and creative thinking in learners.
- Develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

DESIGN OF QUESTION PAPER
PHYSICS

Weightage to different forms of questions:

Sl. no.	Forms of Questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	5	5
2.	VSA	1	5	5
3.	SA- I	2	6	12
4.	SA- II	3	11	33
5	LA	5	3	15
	Total		**30**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	15	11
2.	Average	70	49
3.	Difficult	15	10

The expected time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected time for each question	Total expected time
1.	MCQ	-	3 minutes
2.	VSA	1 minute	5 minutes
3.	SA- I	4 minutes	24 minutes
4.	SA- II	8 minutes	88 minutes
5.	LA	15 minutes	45 minutes
6.	Reading Q.paper & Revision	15 minutes	15 minutes
		Total time	**180 minutes**

Scheme of Options :

1. There will be no overall options.
2. Internal choice (parallel question) shall be provided in :
   i. any 3(three) questions in 2 marks
   ii. any 4(four) questions in 3 marks
   iii. 3(three) questions in 5 marks
3. Weightage of about 10 marks shall be given for numerical problems.

CLASS - XI
PHYSICS (Theory)

Unit-wise weightage

Theory Paper **Time: 3 Hrs.** **Marks: 70**

Unit		Marks
I.	Physical World & Measurement	04
II.	Kinematics	10
III.	Laws of Motion	08
IV.	Work, Energy & Power	06
V.	Motion of System of Particles & Rigid Body	06
VI.	Gravitation	06
VII.	Properties of Bulk Matter	10
VIII.	Thermodynamics	05
IX.	Behaviour of Perfect Gas & Kinetic Theory of Gases	05
X.	Oscillations & Waves	10
	Total	**70**

Part – A: External

Unit-I: Physical World and Measurement **4 marks/10 periods**

Physics : scope and excitement; nature of physical laws; Physics, technology and society.
Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures.

Dimensions of physical quantities, dimensional analysis and its applications.

Unit II: Kinematics **10 marks/30 periods**

Frame of reference, Motion in a straight line: Position-time graph, speed and velocity. Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity-time and position-time graphs, relations for uniformly accelerated motion (graphical treatment).

Elementary concepts of differentiation and integration for describing motion. *Scalar and vector quantities*: Position and displacement vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Relative velocity.

Unit vector. Resolution of a vector in a plane – rectangular components.

Scalar and Vector products of Vectors. Motion in a plane. Cases of uniform velocity and uniform acceleration-projectile motion. Uniform circular motion.

Unit III: Laws of Motion **8 marks/16 periods**

Intuitive concept of force. Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications.

Equilibrium of concurrent forces. Static and kinetic friction, laws of friction, rolling friction, lubrication.

Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

Unit IV : Work, Energy and Power 6 marks/16 periods

Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power.

Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-conservative forces; ,motion in a vertical circle, elastic and inelastic collisions in one and two dimensions.

Unit V : Motion of System of Particles and Rigid Body 6 marks/18 periods

Centre of mass of a two-particle system, momentum conservation and center of mass motion. Centre of mass of rigid body; Centre of mass of uniform rod.

Moment of a force, torque, angular momentum, conservation of angular momentum with some examples.

Equilibriumof rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions; moment of inertia, radius of gyration. Values of M.I. for simple geometrical objects (no derivation). Statement of parallel and perpendicular axes theorems and their applications.

Unit VI: Gravitation 6 marks/14 periods

Kepler's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth.

Gravitational potential energy; gravitational potential. Escape velocity, Orbital velocity of a satellite. Geo-stationary satellites.

Unit VII: Properties of Bulk Matter 10 marks/28 periods

Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear, modulus of rigidity. Posson's ratio; elastic energy.

Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes). Effect of gravity on fluid pressure.

Viscosity, Stokes' law, terminal velocity, Reynold's number, streamline and turbulent flow. Critical velocity, Bernoulli's theorem and its applications.

Surface energy and surface tension, angle of contact, excess of pressure, application of surface tension ideas to drops, bubbles and capillary rise.

Heat, temperature, thermal expansion; thermal expansion of solids, liquids, and gases. Anomalous expansion. Specific heat capacity: C_P, C_V - calorimetry; change of state – latent heat.

Heat transfer-conduction and thermal conductivity, convection and radiation, Qualitative ideas of Black body Radiation, Wein's displacement law and Green House Effect.

Newton's law of cooling and Stefan's Law.

Unit VIII: Thermodynamics 5 marks/12 periods

Thermal equilibrium and definition of temperature (zeroth law of thermodynamics). Heat, work and internal energy. First law of thermodynamics. Isothermal and adiabatic process.

Second law of thermodynamics: reversible and irreversible processes. Heat engines and refrigerators.

Unit IX: Behaviour of Perfect Gas and Kinetic Theory 5 marks/8 periods

Equation of state of a perfect gas, work done on compressing a gas.

Kinetic theory of gases : Assumptions, concept of pressure. Kinetic energy and temperature; rms speed of gas molecules; degrees of freedom, law of equipartition of energy (statement

only) and application of specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit X: Oscillations and Waves **10 marks/28 periods**

Periodic motion – period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring – restoring force and force constant; energy in S.H.M. – kinetic and potential energies; simple pendulum – derivation of expression for its time period; free, forced and damped oscillations (qualitative ideas only), resonance.

Wave motion. Longitudinal and transverse waves, speed of wave motion. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats, Doppler effect.

Part – B: Internal (Practical)

Section A

Experiments

1. To measure diameter of a small spherical/cylindrical body using Vernier calipers.
2. to measure internal diameter and depth of a given beaker/calorimeter using Vernier calipers and hence find its volume.
3. To measure diameter of a given wire, using screw gauge.
4. To measure thickness of a given sheet using screw gauge.
5. To measure volume of an irregular lamina using screw gauge.
6. To determine radius of curvature of a given spherical surface by a spherometer.
7. To determine the mass of two different objects using a beam balance.
8. To find the weight of a given body using parallelogram law of vectors.
9. Using a simple pendulum, plot L-T and L-T^2 graphs. Hence find the effective length of second's pendulum using appropriate graph.
10. To study the relationship between force of limiting friction and normal reaction and to find co-efficient of friction between a block and a horizontal surface.
11. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination (θ) by plotting graph between force and sin.

Activities

1. To make a paper scale of given least count, e.g. 0.2cm, 0.5cm.
2. To determine mass of a given body using a metre scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of a jet of water with angle of projection.
6. To study the conservation of energy of a ball rolling down on inclined plane (using a double inclined plane).
7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.

Section B

Experiments

1. To determine Young's modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting graph between load and extension.
3. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and I/V.
4. To determine the surface tension of water by capillary rise method.

5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
7. To determine specific heat capacity of a given (i) solid (ii) liquid, by method of mixtures.
8. (i) To study the relation between frequency and length of a given wire under constant tension using sonometer.
   (ii) To study the relation between the length of a given wire and tension for constant frequency using sonometer.
9. To find the speed of sound in air at room temperature using a resonance tube by two-resonance positions.

Activities

1. To observe change of state and plot a cooling curve for molten wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To note the change in level of liquid in a container on heating and interpret the observations.
4. To study the effect of detergent on surface tension by observing capillary rise.
5. To study the factors affecting the rate of loss of heat of a liquid.
6. To study the effect of load on depression of a suitably clamped metre scale loaded (i) at its end (ii) in the middle.

Evaluation Scheme for Practical Examination:

1.	One experiment from each section.	6+6=12 marks
2.	One activity from any section.	4 marks
3.	Practical record (experiments & activities).	6 marks
4.	Record of demonstration experiments & viva based on these experiment.	3 marks
5.	Viva on experiment & activities.	5 marks
	Total	**30 marks**

1. Prescribed textbook:
Physics Class XI - NCERT Textbook (Nagaland Edition)
Printed & distributed by Goyal Brothers Prakashan

2. Reference book:
Modern abc of Physics - Modern Publishers
by Satish K. Gupta
MBD House, Railway Road
Jalandhar City

3. Laboratory Manual Book:
PHYSICS Class XI - Academic Publishers
Kohima, Nagaland

CLASS - XII
PHYSICS (Theory)

Unit-wise weightage
Theory Paper **Time: 3 Hrs.** **Marks: 70**

Unit		Marks
I.	Electrostatics	08
II.	Current Electricity	08
III.	Magnetic effect of current & Magnetism	08
IV.	Electromagnetic Induction and Alternating current	08
V.	Electromagnetic Waves	03
VI.	Optics	12
VII.	Dual nature of Matter	04
VIII.	Atoms and Nuclei	07
IX.	Electronic Devices	07
X.	Communication Systems	05
	Total	**70**

Part – A: External

Unit I : Electrostatics **25 periods/8 marks**

Electric Charges and their conservation, Coulomb's law –force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines; electric dipole, electric field due to a dipole; torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graff generator.

Unit II : Current Electricity **22 periods/8 marks**

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility, and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity.

Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel.

Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge.

Potentiometer – principle and its applications to measure potential difference, and for comparing emf of two cells; measurement of internal resistance of a cell.

Unit III : Magnetic Effects of Current and Magnetism 25 periods/8 marks

Concept of magnetic field, Oersted's experiment. Biot – Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids. Force on a moving charge in uniform magnetic and electric field. Cyclotron.

Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements.

Para, dia and ferro – magnetic substances, with examples.

Electromagnets and factors affecting their strengths. Permanent magnets.

Unit IV: Electromagnetic Induction and Alternating Currents 19 periods/8 marks

Electromagnetic induction; Faraday's law, induced emf and current; Lenz's law, Eddy currents. Self and mutual inductance.

Alternating currents, peak and rms value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current.
AC generator and transformer.

Unit V : Electromagnetic waves 5 periods/3 marks

Need for displacement current.
Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves.
Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI : Optics 30 periods/12 marks

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lens-maker's formula. Magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror. Refraction and dispersion of light through a prism.
Scattering of light – blue colour of the sky and reddish appearance of the sun at sunrise and sunset.
Optical instruments: Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia)
Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.
Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts.
Proof of laws of reflection and refraction using Huygens' principle.

Interference, Young's double hole experiment and expression for fringe width coherent sources and sustained interference of light.

Diffraction due to single slit, width of central maximum.

Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarized light; Brewster's law, uses of plane polarized light and Polaroids.

Unit VII : Dual Nature of Matter and Radiation 8 periods/4 marks

Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.

Matter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained.)

Unit VIII : Atoms & Nuclei 18 periods/7 marks

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones.

Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission and fusion.

Unit IX : Electronic Devices 18 periods/7 marks

Energy bands in solids (qualitative ideas only), conductors, insulators and semiconductors; semiconductor diode – I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit X : Communication Systems 10 periods/5 marks

Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude-modulated wave.

Part –B: Internal (Practical)

Section A

Experiments

1. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
2. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
3. To verify the laws of combination (series/parallel) of resistance using a metre bridge.
4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/ rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

Section B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex lens, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between u and v or between $u1$
4. and $v1$
5.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a traveling microscope.
7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror.
8. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.
9. To draw the characteristic curve of a zener diode and to determine its reverse break down voltage.
10. To study the characteristics of a common – emitter npn or pnp transistor and to find out the values of current and voltage gains.

Activities

1. To identify a diode, an LED, a transistor, an IC, a resistor and a capacitor from mixed collection of such items.
1. Use of multimeter to (i) identify base of transistor, (ii) distinguish between npn and pnp type transistors, (iii) see the unidirectional flow of current in case of a diode and an LED, (iv) check whether a given electronic component (e.g. diode, transistor or IC) is in working order.
2. To study effect of intensity of light (by varying distance of the source) on an LDR.
3. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
4. To observe polarization of light using two Polaroids.
5. To observe diffraction of light due to a thin slit.
6. To study the nature and size of the image formed by (i) convex lens (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
7. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Evaluation Scheme

Every student will perform minimum 12 experiment (6 from each section) & 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments.

Evaluation Scheme for Practical Examination:

1.	One experiment from each section.	6+6=12 marks
2.	One activity from any section.	4 marks
3.	Practical record (experiments & activities).	6 marks
4.	Record of demonstration experiments & viva based on these experiment.	3 marks
5.	Viva on experiment & activities.	5 marks
	Total	**30 marks**

1. Prescribed textbook:

Physics Class XII - NCERT Textbook (Nagaland Edition)
Printed & distributed by Goyal Brothers Prakashan

2. Reference book:

Modern abc of Physics - Modern Publishers
Class XII MBD House, Railway Road
By Prof. B. K. Sharma Jalandhar City

3. Laboratory Manual Book:

PHYSICS Class XII - Academic Publishers
Kohima, Nagaland

CHEMISTRY

Objectives:

The broad objectives of teaching chemistry at Higher Secondary stage are to help the learners:

- To promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
- To develop an interest in students to study chemistry as discipline.
- To strengthen the concepts developed at the secondary stage and to provide firm; foundation for further learning of chemistry at tertiary level more effectively.
- To make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.
- To develop positive scientific attitude and to appreciate contribution of chemistry towards the improvement of quality of human life.
- To expose the students to various emerging new areas of chemistry, and to different processes used in industries and their technological applications.
- To equip students to face various changes related to health, nutrition, environment, population, weather, industries and agriculture.
- To develop problem solving skills and nature curiosity, aesthetic sense and creativity.
- To inculcate values of honesty, integrity, concern for life and preservation of the environment.
- To make the learner realize the interface of chemistry with other discipline of science such as Physics, Biology, Geology, Geography etc.
- To acquaint students with different aspects of chemistry used in daily life.

DESIGN OF QUESTION PAPER

CHEMISTRY

Weightage to different forms of questions:

Sl. no.	Forms of Questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	5	5
2.	VSA	1	5	5
3.	SA- I	2	6	12
4.	SA- II	3	11	33
5.	LA	5	3	15
	Total		**30**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	15	11
2.	Average	70	49
3.	Difficult	15	10

The expected time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected time for each question	Total expected time
1.	MCQ	-	3 minutes
2.	VSA	1 minute	5 minutes
3.	SA- I	4 minutes	24 minutes
4.	SA- II	8 minutes	88 minutes
5.	LA	15 minutes	45 minutes
6.	Reading Q.paper & Revision	15 minutes	15 minutes
		Total time	**180 minutes**

Scheme of options:

1. There will be no overall option.
2. Internal choice (parallel question) shall be provided in :
   i. any 3(three) questions in 2 marks
   ii. any 4(four) questions in 3 marks
   iii. 3(three) questions in 5 marks
3. Weightage of about 10 marks shall be assigned to numerical problems.

CLASS - XI
CHEMISTRY (Theory)

Unit-wise weightage

Theory Paper **Time: 3 Hrs.** **Marks: 70**

Unit		Marks
I.	Some Basic Concepts of Chemistry	3
II.	Structure of Atom	6
III.	Classification of Elements and Periodicity in Properties	4
IV.	Chemical Bonding and Molecular Structure	6
V.	States of Matter: Gases and Liquids	4
VI.	Thermodynamics	6
VII.	Equilibrium	6
VIII.	Redox Reactions	3
IX.	Hydrogen	3
X.	s-Block Elements	5
XI.	Some p-Block Elements	6
XII.	Organic Chemistry: Some Basic Principles & Techniques	7
XIII.	Hydrocarbons	8
XIV.	Environmental Chemistry	3
	Total	**70**

Part – A: External

Unit I: Some Basic Concepts of Chemistry **3 marks/14 periods**

General Introduction: Importance and scope of chemistry.

Historical approach to particulate nature of matter, laws of chemical combination. *Dalton's atomic theory*: concepts of elements, atoms and molecules.

Atomic and molecular masses. Mole concept and molar mass: percentage composition, empirical and molecular formula; chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit II: Structure of Atom **6 marks/16 periods**

Discovery of electron, proton and neutron; atomic number, isotopes and isobars. Thompson's model and its limitations, Rutherford's model and its limitations. Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p, and d orbitals, rules for filling electrons in orbitals-Aufbau's principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half filled and completely filled orbitals.

Unit III: Classification of Elements and Periodicity in Properties **4 marks/8 periods**

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements-atomic radii, ionic radii, inert gas radii ionization enthalpy, electron gain enthalpy, electro negativity, valence. Nomenclature of elements with atomic number greater than 100.

Unit IV: Chemical Bonding and Molecular Structure **6 marks/16 periods**

Valence electrons, ionic bond, covalent bond: bond parameters. Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization,

involving *s, p* and *d* orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.

Unit V: States of Matter: Gases and Liquids 4 marks/12 periods

Three states of matter. Intermolecular interactions, type of bonding, melting and boiling points. Role of gas laws in elucidating the concept of the molecule, Boyle's law, Charle's law, Gay Lussac's law, Avogadro's law. Ideal behaviour, empirical derivation of gas equation, Avogadro's number. Ideal gas equation. Kinetic energy and molecular speeds (elementary idea). derivation from ideal behaviour, liquefaction of gases, critical temperature.

Liquid State-Vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations).

Unit VI: Thermodynamics 6 marks/18 periods

Concepts of system, types of systems, surroundings. Work, heat, energy, extensive and intensive properties, state functions.

First law of thermodynamics-internal energy and enthalpy, heat capacity and specific heat, measurement of (ΔU) and (ΔH), Hess's law of constant heat summation, enthalpy of: bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution.

Introduction of entropy as a state function, Second law of thermodynamics. Gibbs energy change for spontaneous and non-spontaneous process, criteria for equilibrium.

Third law of thermodynamics – Brief introduction.

Unit VII: Equilibrium 6 marks/20 periods

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium-Le Chatelier's principle; ionic equilibrium-ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of polybasic acids, acid strength, concept of pH, Hydrolysis of salts (elementary idea). Buffer solutions, Henderson Equation, solubility product, common ion effect (with illustrative examples).

Unit VIII: Redox Reactions 3 marks/6 periods

Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions in terms of loss and gain of electron and change in oxidations numbers, applications of redox reactions.

Unit IX: Hydrogen 3 marks/8 periods

Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen; hydrides-ionic, covalent and interstitial; physical and chemical properties of water, heavy water; hydrogen peroxide-preparation, properties, use and structure; hydrogen as a fuel.

Unit X: s-Block Elements (Alkali and Alkaline earth metals) 5 marks/12 periods

Group 1 and Group 2 elements:

General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens; uses.

Preparation and properties of some important compounds:

Sodium carbonate, sodium chloride, sodium hydroxide and sodium hydrogen carbonate, biological importance of sodium and potassium.

CaO, $CaCO_3$ and industrial use of lime and limestone, biological importance of Mg and Ca.

Unit XI: Some p-Block Elements. 6 marks/16 periods

General Introduction to p-Block Elements.

Group 13 elements: General introduction, electronic configuration, occurrence. Variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group; Boron-physical and chemical properties, some important compounds: borax, boric acids, boron hydrides. Aluminium: uses, reactions with acids and alkalies.

Group 14 elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first element, Carbon-catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides.

Important compounds of silicon and a few uses: silicon tetrachloride, silicones, silicates and zeolites, their uses.

Unit XII: Organic Chemistry-Some Basic Principles and Techniques.

7 marks/14 periods

General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds.

Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation.

Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions; electrophiles and nucleophiles, types of organic reactions.

Unit XIII: Hydrocarbons 8 marks/16 periods

Classification of hydrocarbons

Aliphatic Hydrocarbons:

Alkanes–Nomenclature, isomerism, conformations (ethane only), Physical properties, chemical reactions including free radical, mechanism of halogenation, combustion and pyrolysis.

Alkenes–Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation; chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

Alkynes–Nomenclature, structure of triple bond (ethyne), physical properties. Methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of–hydrogen, halogens, hydrogen halides and water.

Aromatic hydrocarbons: Introduction, IUPAC nomenclature; Benzene: resonance aromaticity; chemical properties: mechanism of electrophilic substitution – nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation; directive influence of functional group in mono-substituted benzene; carcinogenicity and toxicity.

Unit XIV: Environmental Chemistry 3 marks/4 periods

Environmental pollutant-air, water and soil pollution, chemical reactions in atmosphere, smog, major atmospheric pollutants; acid rain, ozone and its reactions, effects of depletion of ozone layer, greenhouse effect and global warming-pollution due to industrial wastes; green chemistry as an alternative tool for reducing pollution, strategy for control of environmental pollution.

Part – B: Internal (Practical)

Micro-chemical methods are available for several of the practical experiments. Whenever possible such techniques should be used.

A. Basic Laboratory Techniques

1. Cutting glass tube and glass rod
2. Bending a glass tube
3. Drawing out a glass jet
4. Boring a cork

B. Characterization and Purification of chemical substance.

1. Determination of melting point of an organic compound.
2. Determination of boiling point of an organic compound.
3. Crystallization involving impure sample of any one of the following:
   Alum, copper sulphate, Benzoic acid.

C. Experiments related to pH change

(a) Any one of the following experiments:

i. Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.

ii. Comparing the pH of solutions of strong and weak acid of same concentration.

iii. Study the pH change in the titration of a strong acid with a strong base using universal indicator.

(b) Study of pH change by common-ion effect in case of weak acids and weak bases.

D. Chemical Equilibrium

One of the following experiments:

(a) Study the shift in equilibrium between ferric ions and thiocynate ions by increasing/decreasing the concentration of either of the ions.

(b) Study the shift in equilibrium between $[Co(H_2$

(c) $O)_6$

(d) $]^{+2}$

(e) and chloride ions by changing the concentration of either of the ions.

E. Quantitative Estimation

- Using a chemical balance
- Preparation of standard solution of oxalic acid.
- Determination of strength of a given solution of sodium hydroxide by titrating it against standard solution of oxalic acid.
- Preparation of standard solution of sodium carbonate.
- Determination of strength of a given solution of hydrochloric acid by titrating it against standard sodium carbonate solution.

F. Qualitative Analysis

(a) Determination of one anion and one cation in a given salt.

Cations - Pb^{+2}, Cu^{+2}, As^{+3}, $A1^{+3}$, Fe, Mn, Ni, Zn, Co,Ca, Sr, Ba, Mg, NH_4^+

Anions - CO_3^{-2}, S^{-2}, SO_3^{-2}, SO_4^{-2}, NO_2^-, NO_3^-, Cl^-, Br^-, I, PO_4^{-3}, $C_2O_4^{-2}$, CH_3COO

(Note: Insoluble salts excluded)

(b) Detection of nitrogen, sulphur, chlorine, in organic compounds.

Project

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects

- Checking the bacterial contamination in drinking water by testing sulphide ion.
- Study of the methods of purification of water.
- Testing the hardness, presence of iron, fluoride, chloride etc., depending upon the regional variation in drinking water and the study of causes of presence of these ions above permissible limit (if any).
- Investigation of the foaming capacity of different washing soaps and the effect of addition of sodium carbonate on them.
- Study of the acidity of different samples of the tea leaves.
- Determination of the rate of evaporation of different liquids.
- Study of the effect of acids and bases on the tensile strength of fibres.
- Analysis of fruit and vegetables juices for their acidity.

Note: ***Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.***

Practical

Evaluation Scheme for Practical Examination	**Marks**
Volumetric Analysis .	**10 marks**
Salt Analysis.	**8marks**
Content Based Experiment.	**6 marks**
Class record and viva on experiment & project.	**6 marks**
Total	**30 marks**

1. ***Prescribed textbook:***
   Chemistry Textbook for Class XI - NCERT Textbook (Nagaland Edition)
   Printed & distributed by Goyal Brothers Prakashan

2. ***Reference book:***
   Modern's ABC of Chemistry - Modern Publishers
   by Dr. S.P Jauhar
   MBD House, Railway Road,
   Jalandhar City.

3. ***Laboratory Manual Book:***
   CHEMISTRY Class XI - Academic Publishers
   Kohima, Nagaland

CLASS – XII
CHEMISTRY (Theory)

Unit-wise weightage
Theory Paper Time: 3 Hrs. Marks: 70

Unit	Topic/Chapter	Marks
I.	Solid state	4
II.	Solutions	5
III.	Electrochemistry	6
IV.	Chemical Kinetics	4
V.	Surface Chemistry	4
VI.	General Principles and Processes of Isolation of Elements	3
VII.	p-Block elements	8
VIII.	d-and f-Block Elements	5
IX.	Coordination Compounds	3
X.	Haloalkanes and Haloarenes	4
XI.	Alcohols, Phenols and Ethers	4
XII.	Aldehydes, Ketones and Carboxylic acids	6
XIII.	Organic Compounds containing nitrogen	4
XIV.	Biomolecules	4
XV.	Polymers	3
XVI.	Chemistry in Everyday life	3
	Total	**70**

Part – A: External

Unit I: Solid State **12 periods/4 marks**

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties, Band theory of metals, conductors, semiconductors and insulators and *n* and *p* type semiconductors.

Unit II: Solutions **12 periods/5 marks**

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties-relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osomotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass. Vant Hoff factor.

Unit III: Electrochemistry **14 periods/6 marks**

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's law, electrolysis and laws of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells. Relation between Gibbs energy change and EMF of a cell, fuel cells; corrosion.

Unit IV: Chemical Kinetics. **12 periods/4 marks**

Rate of a reaction (average and instantaneous), factors affecting rates of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenious equation.

Unit V: Surface Chemistry **8 periods/4 marks**

Adsorption-physisorption and chemisorption; factors affecting adsorption of gases on solid; catalysis: homogeneous and heterogeneous, activity and selectivity: enzyme catalysis; colloidal state: distinction between true solutions, colloids and suspensions; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion-types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements 8 periods/3 marks

Principles and methods of extraction-concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

Unit VII: p-Block elements **14 periods/8 marks**

*Group 15 elements***:** General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen-preparation; properties and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms; compounds of phosphorous: preparation and properties of phosphine, halides (PCl_3, PCl_5) and oxoacids (elementary idea only)

*Group 16 elements***:** General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: preparation, properties and uses; classification of oxides; ozone. Sulphur-allotropic forms; compounds of Sulphur: preparation, properties and uses of Sulphur dioxide; sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only)

*Group 17 elements***:** General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structure only)

*Group 18 elements***:** General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block elements **14 periods/5 marks**

General introduction, electronic configuration, occurrence and characters of transition metals, general trends in properties of the first row transition metals-metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation. Preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids-electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids-Electronic configuration, oxidation states and comparison with Lanthanoids.

Unit IX: Coordination compounds **12 periods/3 marks**

Coordination compounds-Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds, bonding, Werner's theory, VBT, CFT; isomerism (structural and stereo) importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

Unit X: Haloalkanes and Haloarenes. **12 periods/4 marks**

*Haloalkanes***:** Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions. Optical rotation.

*Haloarenes***:** Nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only)

Uses and environmental effects of-dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols and Ethers **12 periods/4 marks**

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophillic substitution reaction, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids **12 periods/6 marks**

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic compounds containing Nitrogen **10 periods/4 marks**

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides – will be mentioned at relevant places in context.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules **12 periods/4 marks**

Carbohydrates – Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration, oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance.

Proteins – Elementary idea of α - amino acids, peptide bond, polypeptides proteins, primary structure, secondary structure, tertiary structure and quaternary structure (qualitative idea only), denaturation of proteins; enzymes.

Hormones – Elementary idea (excluding structure)

Vitamins-classification and functions.

Nucleic Acids: DNA & RNA.

Unit XV: Polymers **8 periods/3 marks**

Classification-natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: nature and synthetic like polythene, nylon, polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.

Unit XVI: Chemistry in Everyday life: **8 periods/3 marks**

1. Chemicals in medicines- analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
2. Chemicals in food- preservatives, artificial sweetening agents, elementary idea of antioxidants.
3. Cleansing agents- soaps and detergents, cleansing action.

Part – B: Internal (Practical)

Micro- chemical methods are available for several of the practical experiments. Wherever possible such techniques should be used.

A. **Surface Chemistry**

(a) Preparation of one lyophilic and one lyophobic sol.
Lyophilic Sol-starch, egg albumin and gum
Lyophobic Sol-aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Dialysis of sol prepared in (a) above.
(c) Study of the role of emulsifying agents in stabilizing the emulsions of different oils.

B. Chemical Kinetics

(a) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.
(b) Study of reaction rates of any one of the following:
  (i) Reaction of iodide ion with hydrogen peroxide at room temperature using different concentration of iodide ions.
  (ii) Reaction between potassium iodate (KIO) and sodium sulphite: (NaSO) using starch solution as indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments
a. Enthalpy of dissolution of copper sulphates or potassium nitrate.
b. Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH)
c. Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform

D. Electrochemistry

Variation cell potential in $Zn/Zn^{+2}||Cu^{+2}/Cu$ with change in concentration of electrolytes (CuSO or ZnSO) at room temperature.

E. Chromatography

i. Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f
ii. values.
ii. Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R values to be provided).

F. Preparation of Inorganic Compounds

(a) Preparation of double salt of ferrous ammonium sulphates or potash alum.
(b) Preparation of potassium ferric oxalate.

G. Preparation of Organic compounds

Preparation of any two of the following compounds:
(i) Acetanilide
(ii) Di-benzal acetone
(iii) P-Nitroacetanilide
(iv) Aniline yellow or 2-Napthol aniline dye

H. Tests for the functional groups present in organic compounds

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary) groups.

I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.

J. Determination of Concentration/Molarity of $KMnO_4$ solution by titrating it against a standard Solution of –

(i) Oxalic acid
(ii) Ferrous ammonium sulphate
(Students will be required to prepare standard solutions by weighing themselves.)

K. Qualitative Analysis

- Determination of one cation and one anion in a given salt.
  Cations – Pb^{+2}, Cu^{+2}, As^{+3}, Al^{+3}, Fe, Mn, Ni, Zn, Co, Ca, Sr, Ba, Mg, NH^{+4}
  Anions – CO^{-23}, S^{-2}, SO^{-23}, SO^{-24}, NO^{-2}, NO^{-3}, Cl^{-}, Br^{-}, I, PO^{34-}, C_2O, CH_3COO
  (Note : Insoluble salts excluded)

Project

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested projects

- Study of presence of axalate ions in guava fruit at different stages of ripening.
- Study of quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with the natural milk with respct to curd formation effect of temerature, etc.
- Study of the effect of potassium bisulphate as food preservative under various conditions (temperatire, concentration, time etc.)
- Study of digestion of starch by salivary amyliase and effect of pH and temperature on it.
- Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamim).
- Study of common food aduterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher. In addition models and exhibits for exhibition, depiction basic principles and application in daily life may also be included.

Practicals

Evaluation Scheme for Practical Examination		**Marks**
Volumetric Analysis .		**10 marks**
Salt Analysis.		**8 marks**
Content Based Experiment.		**6 marks**
Class record and viva on experiment & project.		**6 marks**
	Total	**30 marks**

1. ***Prescribed textbook:***
   Chemistry Textbook for Class XII - NCERT Textbook (Nagaland Edition)
   Printed & distributed by Goyal Brothers Prakashan
2. ***Reference book:***
   Chemistry Class XII - Modern Publishers
   by Dr. S.P Jauhar MBD House, Railway Road,
   Jalandhar City.
3. ***Laboratory Manual Book:***
   CHEMISTRY Class XII - Academic Publishers
   Kohima, Nagaland

BIOLOGY

Objectives:

- To promote understanding of basic principles of biology.
- To expose the learners to emerging knowledge and its relevance to individuals and society.
- To acquaint the students with benefits of knowing about issue related to nutrition, health, population, environment and development.
- To encourage rationale/specific attitude to issues related to population, environment and development.
- To develop skills essentials to study and understand complexities of living world and harmonious co-existence.
- To enhance awareness about environment issues, problems and the appropriate solutions.
- To develop appropriate environmental ethics and values.
- To enable the students to appreciate the complexity of living world and the role of biology vis-a-vis other disciplines.
- To enable the students to appreciate role of Biology in dispelling myths, misconceptions and misbeliefs.

DESIGN OF QUESTION PAPER
BIOLOGY

Weightage to different forms of questions:

Sl.no.	Forms of Questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	10	10
2.	SA- I	2	6	12
3.	SA- II	3	6	18
4.	LA	5	6	30
	Total		**28**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficult	20	14
	Total	**100**	**70**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length of answer	Expected time for each question	Total expected time
1.	MCQ	-	1 minute	10 minutes
2.	SA - I	30-35 words	5 minutes	30 minutes
3.	SA - II	40-60 words	6 minutes	36 minutes
4.	LA	100-200 words	15 minutes	90 minutes
5.	Reading Q. Paper & Revision	-	-	14 minutes
			Total time	**180 minutes**

Scheme of options:

1. There will be no overall option.
2. Internal choice shall be provided in 1(one) question of 3 marks and 3(three) questions of 5 marks each.

CLASS-XI
BIOLOGY (Theory)

Unit-wise weightage

Theory Paper **Time: 3 Hrs.** **Marks: 70**

Unit		Marks
I.	Diversity in Living world	8
II.	Structural Organisation in Animals and Plants	10
III.	Cell Structure and Function	16
IV.	Plant physiology	18
V.	Human physiology	18
	Total	**70**

Part – A: External

Unit I. Diversity in Living World

Section A: **4 marks/13 Periods**

What is living?; Biodiversity; Need for classification; Three domain of life; Taxonomy & Systematics; Concept of species and taxonomical hierarchy; Binomial nomenclature; Tools for study of Taxonomy- Museums, Zoos, Herbaria, Botanical gardens.

Salient features and classification of plants into major groups- Algae, Bryophytes, Pteridophytes, Gymnosperm and Angiosperm (three to five salient and distinguishing features and at least two examples of each category); Angiosperms- classification up to class, characteristic features and examples.

Section B: **4 marks/12 Periods**

Five kingdom classification; Salient features and classification of Monera; Protista and Fungi into major groups; Lichens; Viruses and Viroids.

Salient features and classification of animals - non chordate up to phyla level and chordate up to classes level (three to five salient features and at least two examples).

Unit II. Structural Organisation in Animals and Plants

Section A: **5 marks/12 Periods**

Morphology and modifications; Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence- cymose and racemose, flower, fruit and seed (To be dealt along with the relevant practical of the Practical Syllabus).

Section B: **5 marks/13 Periods**

Animal tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (Brief account only).

Unit III. Cell Structure and Function

Section A: **8 marks/20 Periods**

Cell theory and cell as the basic unit of life; Structure of prokaryotic and eukaryotic cell; Plant cell; Cell envelope, cell membrane, cell wall; Cell organelles- structure and function; Endomembrane system- endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies.

Section B: **8 marks/20 Periods**

Animal cell: Nucleus-nuclear membrane, chromatin, nucleolus. Cytoskeleton, cilia, flagella, centrioles (ultra structure and function)

Chemical constituents of living cells: Biomolecules- structure and function of proteins, carbohydrates, lipid, nucleic acids; Enzymes- types, properties, enzyme action.

Cell division; Cell cycle, mitosis, meiosis and their significance.

Unit IV. Plant Physiology 18 marks/45 Periods

Transport in plants; Movement of water, gases ad nutrients; Cell to cell transport- Diffusion, facilitated diffusion, active transport; Plant- water relations- Imbibition, water potential, osmosis, plasmolysis; Long distance transport of water- Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; Transpiration- Opening and closing of stomata; Uptake and translocation of mineral nutrients- Transport of food, phloem transport, Mass flow hypothesis; Diffusion of gases (brief mention).

Mineral nutrition: Essential minerals, macro and micronutrients and their role; Deficiency symptoms; Mineral toxicity; Elementary idea of Hydroponics as a method to study mineral nutrition; Nitrogen metabolism- Nitrogen cycle, biological nitrogen fixation.

Photosynthesis; Photosynthesis as a means of Autotrophic nutrition; Where does photosynthesis take place; How many pigments are involved in Photosynthesis (Elementary idea); Photochemical and biosynthetic phases of photosynthesis; Cyclic and non cyclic photophosphorylation; Chemiosmotic hypothesis; Photorespiration; C_3 and C_4 pathways; Factors affecting photosynthesis.

Respiration: Exchange of gases; Cellular respiration- glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); Energy relations- Number of ATP molecules generated; Amphibolic pathways; Respiratory quotient.

Plant growth and development: Seed germination; Phases of plant growth and plant growth rate; Conditions of growth; Differentiation, dedifferentiation and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators-auxin, gibberellin, cytokinin, ethylene, ABA; Seed dormancy; Vernalisation; Photoperiodism.

Unit V. Human Physiology 18 marks/45 Periods

Digestion and absorption: Alimentary canal and digestive glands; Role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; Calorific value of proteins, Egestion; Nutritional and digestive disorders- PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

Breathing and Respiration: Respiratory organs in animals (recall only); Respiratory system in humans; Mechanism of breathing and its regulation in humans- Exchange of gases, transport of gases and regulation of respiration, Respiratory volumes; Disorders related to respiration- Asthma, Emphysema, Occupational respiratory disorders.

Body fluids and circulation: Composition of blood, blood groups, coagulation of blood; Composition of lymph and its function; Human circulatory system- Structure of human heart and blood vessels; Cardiac cycle, cardiac output, ECG; Double circulation; Regulation of cardiac activity; Disorders of circulatory system- Hypertension, Coronary artery disease, Angina pectoris, Heart failure.

Excretory products and their elimination: Modes of excretion- Ammonotelism, ureotelism, uricotelism; Human excretory system- structure and function; Urine formation, Osmoregulation; Regulation of kidney function- Renin-angiotensin, Atrial Natriuretic Factor, ADH and Diabetes insipidus; Role of other organs in excretion; Disorders-Uraemia, Renal failure, Renal calculi, Nephritis; Dialysis and artificial kidney.

Locomition and Movement: Types of movement- ciliary, flagellar, muscular, Skeletal muscle- contractile proteins and muscle contraction; Skeletal system and its functions (To be dealt with the relevant practical of Practical syllabus); Joints; Disorders of muscular and skeletal system- Myasthenia gravis, Tetany, Muscular dystrophy, Arthritis, Osteoporosis, Gout.

Neural control and coordination: Neuron and nerves; Nervous system in humans- central nervous system, peripheral nervous system and visceral nervous system; Generation and conduction of nerve impulse; Reflex action; Sensory perception; Sense organs; Elementary structure and function of eye and ear.

Chemical coordination and regulation: Endocrine glands and hormones; Human endocrine system-Hypothalamus, Pituitary, Pineal, Thyroid, Parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary Idea); Role of hormones as messengers and regulators, Hypo-and hyperactivity and related disorders (Common disorders e.g. Dwarfism, Acromegaly, Cretinism, goitre, exopthalmic goitre, diabetes, Addison's disease).

Imp: Diseases related to all the human physiology systems to be taught in brief.

Part – B: Internal (Practical)

Practical Paper	**Time: 3 Hrs.**	**Marks: 30**
Unit		**Marks**
I.	Experiment and Spotting	20
II.	Record of one investigatory project and viva based on the project	5
III.	Class record and viva based on experiments	5
	Total	**30**

A. List of experiments

1. Study and describe three locally available common flowering plants from each of the following families (Solanaceae, Fabaceae and Liliaceae) including dissection and display of floral whorls and anther and ovary to show number of chambers. Types of root (Tap and Adventitious); Stem (Herbaceous and woody); Leaf (arrangement, shape, venation, simple and compound).
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves)
5. Study of distribution of stomata in the upper and lower surface of leaves.
6. Comparative study of the rates of transpiration in the upper and lower surface of leaves.
7. Test for the presence of sugar, starch, proteins and fats. To detect them in suitable plant and animal materials.
8. Separation of plant pigments through paper chromatography.
9. To study the rate of respiration in flower buds/leaf tissue and germinating seeds.
10. To test the presence of urea in urine.
11. To detect the presence of sugar in urine/blood sample.
12. To detect the presence of albumin in urine.
13. To detect the presence of bile salts in urine.

B. Study/observation of the following (spotting)

1. Study parts of a compound microscope.
2. Study of the specimens and identification with reasons- Bacteria, Oscilatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant and one dicotyledonous plant and one lichen.
3. Study of specimens and identification with reasons- Amoeba, Hydra, Liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Study of tissues and diversity in shapes and sizes of plant and animal cells (e.g. palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem, phloem, squamous epithelium, muscle fibres and mammalian blood smear) through temporary/permanent slides.
5. Study of mitosis in onion root tips cells and animals cells (grasshopper) from permanent slides.
6. Study of different modifications in root, stem and leaves.
7. Study and identification of different types of inflorescence.
8. Study of imbibition in seeds/raisins.
9. Observation and comments on the experimental set up for showing:
    a. Anaerobic respiration
    b. Phototropism
    c. Apical bud removal
    d. Suction due to transpiration
10. Study of human skeleton and different types of joints.
11. Study of external morphology of cockroach through models.

NOTE : No question paper for practical work will be set by the Board.

Prescribed textbook:

Biology textbook for Class XI	-	***NCERT Nagaland Edition***
Goyal Brothers Prakashan		
Reference book	-	***Modern Publishers***
Modern ABC of Biology		
by Dr. B.B. Arora & A.K. Sabhawal		

CLASS - XII
BIOLOGY (Theory)

Unit-wise weightage

Theory Paper **Time: 3 Hrs.** **Marks: 70**

Unit		Marks
I.	Reproduction	14
II.	Genetic and Evolution	20
III.	Biology and Human Welfare	12
IV.	Biotechnology and Its Applications	10
V.	Ecology and Environment	14
	Total	**70**

Part – A: External

Unit 1. Reproduction **35 Periods/14marks**

Section A: **17 Periods/7 marks**

Reproduction in organisms: Reproduction, a characteristic feature of all organisms for continuation of species; Modes of reproduction- Asexual and sexual; Asexual reproduction; Modes- Binary fission, sporulation, budding, gemmule, fragmentation; vegetative propagation in plants.

Sexual reproduction in flowering plants: Flower structure; Development of male and female gametophytes; Pollination- types, agencies and examples; Outbreedings devices; Pollen- Pistil interaction; Double fertilization; Post fertilization events- Development of endosperm and embryo, Development of seed and formation of fruit; Special modes- apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

Section B: **18 Periods/7 marks**

Human Reproduction: Male and female reproductive system; Microscopic anatomy of testis and ovary; Gametogenesis- spermatogenesis & oogenesis; Menstrual cycle; Fertilization, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (Elementary idea); Parturition (elementary idea); Lactation (Elementary idea).

Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control- Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies- IVF, ZIFT, GIFT (Elementary idea for general awareness).

Unit II. Genetics and Evolution **45 Periods/20marks**

Section A: **15 Periods/9 marks**

Molecular Basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation- Lac Operon.

Section B: **30 Periods/11 marks**

Heredity and variation: Mendelian Inheritance; Deviations from Mendelism- Incomplete dominance, Co-dominance, Multiple alleles and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination- In humans, birds, honeybee; Linkage and crossing over; Sex linked inheritance- Haemophilia, Colour blindness; Mendelian disorders in humans- Thalassemia; Chromosomal disorders in humans; Down's syndrome,

Turner's and Klinefelter's syndromes. Genome and human genome project; DNA finger printing.

Evolution: Origin of life; Biological evolution and evidences for biological evolution (Paleontological, comparative anatomy, embryology and molecular evidence); Darwin's contribution, Modern Synthetic theory of Evolution; Mechanism of evolution- Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; Gene flow and genetic drift; Hardy-Weinberg's Principle; Adaptive Radiation; Human evolution.

Unit III. Biology and Human Welfare **35 Periods/12 marks**

Section A: **10 Periods/4 marks**

Improvement in food production: Plant breeding, tissue culture, single cell protein, Biofortification;

Section B: **25 Periods/8 marks**

Health and Disease: Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, common cold, amoebiasis, ring worm); Basic concept of immunology- vaccines, Cancer, HIV and AIDS, Adolescence, drug and alcohol abuse.

Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers. Apiculture and Animal husbandry.

Unit IV. Biotechnology and Its Applications **30 Periods/10 marks**

Section A: **10 Periods/5 marks**

Principles and process of Biotechnology: Genetic engineering (Recombinant DNA technology), Bt crops.

Section B: **20 Periods/5 marks**

Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; Genetically modified organisms- Transgenic Animals; Biosafety issues- Biopiracy and patents.

Unit V. Ecology and environment **35 Periods/14 marks**

Section A: **27 Periods/10 marks**

Ecosystems: Patterns, components, productivity and decomposition; Energy flow; Pyramids of number, biomass, energy; Nutrient cycling (carbon and phosphorous); Ecological succession; Ecological Services- Carbon fixation, pollination, oxygen release.

Biodiversity and its conservation: Concept of Biodiversity; Patterns of Biodiversity; Importance of Biodiversity; Loss of Biodiversity; Biodiversity conservation; Hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, National parks and sanctuaries.

Environmental issues: Air pollution and its control; Water pollution and its control; Agrochemicals and their effects; Solid waste management; Radioactive waste management, Greenhouse effect and global warming; Ozone depletion; Deforestation; Any three case studies as success stories addressing environmental issues.

Section B: **8 Periods/4 marks**

Organisms and environment: Habitat and niche; Population and ecological adaptations; Population interactions- mutualism, competition, predation, parasitism; Population attributes- growth, birth rate and death rate, age distribution.

Part – B: Internal (Practical)

Unit-wise weightage **Time: 3 Hrs.** **Marks: 30**

Unit		Marks
I.	Two experiments	4+4=8
II.	Slide preparation	5
III.	Spotting	7
IV.	Investigatory project and viva based on the project	5
V.	Record and viva based on the experiment	5
	Total	**30**

PRACTICALS

List of Experiments **60 Periods**

1. Study pollen germination on a slide.
2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity of soil. Correlate with the kinds of plants found in them.
3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
4. Study the presence of suspended particulate matter in air at the two widely different sites.
5. Study of plant population density by quadrate method.
6. Study of plant population frequency by quadrate method.
7. Prepare a temporary mount of onion root tip to study mitosis.
8. To study the effect of the different temperatures and three different pH on the activity of salivary amylase on starch.

Study/observation of the following (Spotting)

1. Flowers adapted to pollination by different agencies (wind, insect).
2. Pollen germination on stigma through a permanent slide.
3. Identification of stages of gamete development i.e. T.S. testis and T.S. ovary through permanent slides (from any mammal).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides.
6. Mendelian inheritance using seeds of different colour/size of any plant.
7. Prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.
8. Exercise on controlled pollination- Emasculation, tagging and bagging.
9. Identification of common disease causing organisms like Ascaris, Entamoeba, Plasmodium, ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.
10. Two plants and two animals found in xerophytic conditions. Comment upon their morphological adaptations.
11. Plants and animals found in aquatic conditions. Comments upon their morphological adaptations.

Prescribed text book:

1. ***Biology textbook for Class XI - NCERT Nagaland Edition Goyal Brothers Prakashan***
2. ***Biology Laboratory Manual Class - XII - Academic Publishers, Kohima***

Reference book:

Modern Abc of Biology Class – XII - Modern Books by Dr. B. B. Arora, A. K. Sabharwal

MATHEMATICS

Objectives

The broad objectives of teaching Mathematics at Higher Secondary School stage intend to help the pupil to:

- acquire knowledge and critical understanding, particularly by way of motivation and visualization of basic concepts, terms, principles, symbols and mastery of underlying processes and skills;
- feel the flow of reasons while proving a result or solving a problem;
- apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method;
- develop positive attitude to think, analyze and articulate logically;
- develop interest in the subject by participating in related competitions;
- acquaint students with different aspects of Mathematics used in daily life;
- develop an interest in students to study Mathematics as a discipline;
- develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of sex biases;
- develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

DESIGN OF QUESTION PAPER
MATHEMATICS

Weightage to different forms of questions:

Sl. No.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	8	8
2.	SA- I	2	8	16
3.	SA- II	4	8	32
4.	LA	6	4	24
	Total		**28**	**80**

Weightage level of questions:

Sl. No.	Level	Percentage	Marks
1.	Easy	30	24
2.	Average	50	40
3.	Difficult	20	16
	Total	**100**	**80**

The expected time to be taken under different forms of questions shall be as follows:

Sl. No.	Forms of questions	No. of question	Expected time for each question	Total expected time
1.	Reading Question paper	-	-	10 minutes
2.	MCQ	8	3 minutes	24 minutes
3.	SA- I	8	5 minutes	40 minutes
4.	SA- II	8	7 minutes	56 minutes
5.	LA	4	10 minutes	40 minutes
6.	Revision	-	-	10 minutes
			Total time	**180 minutes**

Scheme of Options:

1. Internal choice shall be provided in:
   (i) any four questions of SA-II (ii) all four question of LA
2. The options for the internal choice shall be set from the same unit with the same difficulty level.
3. The question setter has the liberty to modify the textual questions but set questions within the purview of the syllabus.

Class XI
Mathematics -Core Structure

Unit-wise weightage

External **Time: 3 Hrs** **Marks : 80**

Units	Marks
1. Sets and Functions	20
2. Algebra	30
3. Coordinate Geometry	13
4. Calculus	04
5. Mathematical Reasoning	03
6. Statistics and Probability	10
Total	**80**
INTERNAL	**20**

Unit 1: Sets and Functions **20 marks**

1. Sets **12 Periods**

Sets and their representation. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of the set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and intersection of sets. Difference of sets. Complement of a set. Properties of Complement sets.

2. Relations and Functions **14 Periods**

Ordered pairs, Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the reals with itself (upto RxRxR).

Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special kind of relation from one set to another. Pictorial representation of a function, domain, co-domain and range of a function. Real valued function of the real variable, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphs. Sum, difference, product and quotients of functions.

3. Trigonometric Functions **18 Periods**

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2 x+\cos^2 x=1$, for all x. Signs of trigonometric functions and sketch of their graphs. Expressing sin $(x + y)$ and cos $(x + y)$ in terms of sin x, sin y, cos x and cos y. Deducing the identities like following:

$$\tan(x\pm y)=\frac{\tan x\pm\tan y}{1\mp\tan x\tan y},\ \cot(x\pm y)=\frac{\cot x\cot y\mp 1}{\cot y\pm\cot x}$$

$$\sin x+\sin y=2\sin\frac{x+y}{2}\cos\frac{x-y}{2},\ \cos x+\cos y=2\cos\frac{x+y}{2}\cos\frac{x-y}{2}$$

$$\sin x-\sin y=2\cos\frac{x+y}{2}\sin\frac{x-y}{2},\ \cos x-\cos y=-2\sin\frac{x+y}{2}\sin\frac{x-y}{2}$$

Identities related to sin $2x$, cos $2x$, tan $2x$, sin $3x$, cos $3x$ and tan $3x$. General solution of trigonometric equations of the type sin θ = sin α, cos θ = cos α and tan θ = tan α. Proofs and simple applications of sine and cosine formulae.

Unit II: Algebra **30 marks**

1. **Principle of Mathematical Induction** **6 Periods**

Process of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.

2. **Complex Numbers and Quadratic Equations** **10 Periods**

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system, Square-root of a complex number.

3. **Linear Inequalities** **10 Periods**

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables – graphically.

4. **Permutations and Combinations** **12 Periods**

Fundamental principle of counting. Factorial n. Permutations and combinations: derivation of formulae and their connections, simple applications.

5. **Binomial Theorem** **8 Periods**

History, statement and proof of the Binomial Theorem for positive integral indices. Pascal's triangle, general and middle term in Binomial expansion, simple applications.

6. **Sequence and Series** **10 Periods**

Sequence and Series. Arithmetic Progression (A.P.), Arithmetic Mean (A.M.), Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P. Arithmetic and geometric series, infinite G.P. and its sum, Geometric Mean (G.M.). Relation between A.M. and G.M. Sum to n terms of the special series: $\sum n, \sum n^2$ and $\sum n^3$

Unit III: Coordinate Geometry **13 marks**

1. **Straight Lines** **9 Periods**

Brief recall of 2-D from earlier classes, shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two-point form, intercepts form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.

2. **Conic Sections** **12 Periods**

Sections of a cone: Circles, ellipse, parabola, hyperbola, a point, a straight line and pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

3. **Introduction to Three-dimensional Geometry** **8 Periods**

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.

Unit IV: Calculus **4 marks**

Limits and Derivatives **18 Periods**

Derivative introduced as rate of change both as that of distance function and geometrically, intuitive idea of limit. $\lim_{x\to 0}\frac{\log_e(1+x)}{x}$, $\lim_{x\to 0}\frac{e^x-1}{x}$. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

Unit V: Mathematical Reasoning **3 marks**

Mathematical Reasoning **8 Periods**

Mathematically acceptable statements. Connecting words/phrases – consolidating the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/or", "implied by", "and", "or", "there exists" and their use through variety of examples related to real life and Mathematics. Validating the statements involving the connecting words – difference between contradiction, converse and contrapositive.

Unit VI: Statistics and Probability **10 marks**

1. Statistics **10 Periods**

Measure of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.

2. Probability **15 Periods**

Random experiments: outcomes, sample spaces (set representation). Events: Occurrence of events, 'not', 'and' & 'or' events, exhaustive events, mutually exclusive events. Axiomatic (set theoretic) probability, connections with the theories of earlier classes. Probability of an event, probability of 'not', 'and' & 'or' events.

Internal Assessment (*Common for both Classes XI & XII*): **20 Marks**

The aim of the internal assessment is to find out areas for improvement and assess the student comprehensively. The areas to be internally assessed are:

Sl.No.	Parts of Internal Assessment	Marks
1.	Periodic Tests (Best 2 out of 3 tests conducted)	10
2.	Portfolio	5
3.	Mathematics Activities	5
	Total:	20

Note: For Mathematics Activites, NCERT Lab Manual may be referred whose pdf is available on the link:

https://ncert.nic.in/science-laboratory-manual.php?ln=

1. Periodic Tests (10 Marks)

The main purpose of the Periodic Assessment is to assess the learning progress of students. This should be done at regular intervals which will give feedbacks and insight to teachers regarding

learners' needs and helps them to improve instruction, do remedial teaching and set curricular targets for a student or a group of students. The feedback will also help students know their errors as well as strengths and weaknesses.

Periodic Tests should be restricted to 3 in an academic year and the average of the best 2 would be taken for final submission of marks. These tests should follow the pattern similar to the final examination and have a gradually increasing portion of content. This should prepare the students for final examination in a more confident manner.

Once schools complete the conduct of all the three periodic tests, they will convert the weightage of each of the three tests into ten marks each for identifying the best two test marks. The best two will be taken into consideration and the average of the two shall be taken as the final marks for Periodic Tests.

In tune with the purpose of periodic assessment i.e. to provide feedback to improve teaching and learning, it becomes of equal importance to use follow-up measures in case students are found deficient in the proficiency of relevant learning outcomes.

1. Portfolio (5 Marks)

The creation of portfolios is suggested to broaden the scope of learning and achieve diverse curriculum outcomes by examining a range of evidence of student performances being assessed.

A portfolio is a purposeful collection of intentionally chosen student's work representing a selection of performances that is assembled over time and describes the learner's efforts, progress, growth and achievement in key areas learning outcomes. It is a tool for assessing a variety of skills not usually testable in a single setting of the traditional written paper and pencil tests. The assessment would include self and peer assessment among others. Its use is recommended as a support to the new instructional approaches that emphasize student's role in constructing knowledge and understanding.

This portfolio can be seen both as a process and as a product: As a product, it holds the performance records and documents, a student has produced during the learning course and represents a collection of their learning achievements. As a process, it enables learners to monitor their own learning systematically, reflect on their performance, redirect their efforts and set future goals.

In a general sense, a portfolio:

- offers the possibility of assessing more complex and important aspects of a learning areas or subject matter that can't be assessed through traditional forms of testing;
- provides a profile of learner's abilities – in-depth growth and progress
- serves as a concrete vehicle for an ongoing communication or exchange of information and feedback among various stakeholders – students, peers teachers, administrators. It may even be used to compare achievement across classrooms or schools;
- serves as a lens and helps to develop among students an awareness of their own learning. The focus on self assessment and reflection helps students to identify their strengths and weaknesses thereby facilitating setting up of realistic improvement goals. The active role that students plays in examining what they have done and what they want to accomplish, not only motivates them but also help to develop meta-cognitive skills which enable them to make adjustments not only in their learning in school but beyond as well;

- provide an opportunity to share own learning with peers and review and give feedback on each other's work. Peer Assessment thus becomes a great support that further facilitates a clear understanding and evaluation of personal goals;

Thus, a portfolio, on one hand helps to establish a common vision of goals and holistic picture of students learning, on the other, increases accountability and contributes to improved teaching and learning.

Preparation of a portfolio

At the outset, it is important to know why a portfolio is being created and be clear of the purposes. It is suggested that the portfolios be an extension of notebooks. They would include classwork and homework assignments that would help evaluate learner's progress. Besides this, portfolio should be a space for the student to display his/her recordings of Mathematics Activities. The attention should be to promote techniques such as annotation, identification of key words / topics / themes, summarization and organization of ideas and content.

The sample of creative work and evidence that demonstrate process skills or development of critical thinking or problem-solving merit inclusion as well. A periodic review of the evidences includes in the portfolio would facilitate self-assessment by learners who would be more aware of their own learning and be able to identify their strengths and weaknesses. The portfolio also provides an opportunity to learners to share and comment on each other's work. Such peer assessment facilitates understanding of criteria of good work to students. It is advised that such criteria be developed and made clear to students. Initially, this self and peer assessment would be a guided endeavour.

Assessing Portfolios

Students' portfolio can be effectively evaluated using a simple scoring rubric. The criteria – the factors to be used in determining the quality of a particular student's portfolio needs to be carefully developed and shared with students. They key elements of the particular criteria need to be specified as well. Suggested are some elements to judge student's portfolio:

- Organization – Neatness and Visual Appeal
- Completion of guided work focused on specific curricular objectives
- Evidences of student's growth
- Inclusion of all relevant work (Completeness)

Teachers can include other relevant criteria and elements to assess portfolios.

A Word of Caution: Portfolios need to be developed in an easy to manage form. They need to be meaningful but simple and accessible. Developing them should not be a burden on students- both in terms of cost and time.

2. <u>Mathematics Activities (5 marks):</u>

Throughout the year, students are expected to perform activities from the NCERT Laboratory Manual for the respective classes which is available on their website. Students shall record activities in their portfolios. The marks can be awarded based on the performance of the students while carrying out the activities. Teachers have the autonomy to include other relevant criteria and elements to award these 5 marks.

Prescribed textbook:

Mathematics for Class XI – Goyal Brothers Prakashan
NCERT (Nagaland Edition)

CLASS - XII
Mathematics (Core Structure)

Unit-wise weightage
External **Time: 3 Hrs** **Marks: 80**

Units		**Marks**
1.	Relations and Functions	8
2.	Algebra	10
3.	Calculus	35
4.	Vectors and Three-Dimensional Geometry	14
5.	Linear Programming	06
6.	Probability	7
	Total	**80**
Internal		**20**
	Grand Total	**100**

Unit I: Relations and Functions **8 marks**

1. Relations and Functions **10 Periods**

Types of relations: Reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

2. Inverse Trigonometric Functions **12 Periods**

Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

Unit II: Algebra **10 marks**

1. Matrices **18 Periods**

Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew-symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists (Here all matrices will have real entries).

2. Determinants **20 Periods**

Determinant of a square matrix (upto 3×3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Unit III: Calculus **35 marks**

1. Continuity and Differentiability **18 Periods**

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function. Concepts of exponential, logarithmic functions. Derivatives of $\log_e x$ and e^x. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

2. Applications of Derivatives **10 Periods**

Applications of derivatives: Rate of change, increasing/decreasing functions, tangents and normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

3. Integrals **20 Periods**

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type:

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}},$$

$$\int \frac{(px+q)}{ax^2 + bx + c} dx, \int \frac{(px+q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2}\, dx, \int \sqrt{x^2 - a^2}\, dx,$$

$$\int \sqrt{ax^2 + bx + c}\, dx \text{ and } \int (px+q)\sqrt{ax^2 + bx + c}\, dx$$

to be evaluated.

Definite integrals as a limit of a sum. Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. Applications of the Integrals **10 Periods**

Applications in finding the area under simple curves, especially lines, arcs of circles/parabolas/ellipses (in standard form only), area between the two above said curves (the region should be clearly identifiable).

5. Differential Equations **10 Periods**

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

$\frac{dy}{dx} + Py = Q$, where P and Q are functions of x or constant

$\frac{dx}{dy} + Px = Q$, where P and Q are functions of y or constant

Unit IV: Vectors and Three-Dimensional Geometry **14 marks**

1. Vectors **10 Periods**

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors, scalar triple product.

2. Three-dimensional Geometry **12 Periods**

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.

Unit V: Linear Programming **6 marks**

Linear Programming **12 Periods**

Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (upto three non-trivial constraints).

Unit VI: Probability **7 marks**

Probability **18 Periods**

Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem. Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (Bernoulli) trials and Binomial distribution.

Prescribed textbook:

Mathematics for Class X II – ***Goyal Brothers Prakashan***
NCERT (Nagaland Edition)

COMPUTER SCIENCE

Learning Objectives:

- Ability to understand basic computational thinking.
- Ability to understand the notion of data types, data structures.
- Ability to appreciate the notion of an algorithm, and understand its structure, including how algorithms handle corner cases.
- Ability to develop a basic understanding of computer systems- architecture, OS, mobile and cloud computing.
- Ability to learn basic SQL programming.
- Ability to learn all about cyber safety.

DESIGN OF QUESTION PAPER
COMPUTER SCIENCE

Weightage to different forms of questions:

Sl.no.	*Forms of questions*	Marks for each question	No. of questions	Total marks
1.	VSA	1	12	12
2.	SA	2	11	22
3.	LA	4	9	36
	Total		**32**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	15	11
2.	Average	70	49
3.	Difficult	15	10
	Total	**100**	**70**

The expected time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected time for each question	Total expected time
1.	Reading Q. Paper	-	5 minutes
2.	VSA	2 minutes	24 minutes
3.	SA	5 minutes	55 minutes
4.	LA	9 minutes	81 minutes
5.	Revision	-	15 minutes
		Total time	**180 minutes**

Scheme of options:

i. Internal choice shall be provided in 5(five) questions of 4 marks each

ii. The option for internal choice shall be set from the same unit with the same difficulty level.

CLASS - XI
COMPUTER SCIENCE

Unit-Wise weightage
Part – A External **70 marks**

Unit	Topics	
1.	COMPUTER SYSTEMS AND ORGANISATION	10
2.	COMPUTATIONAL THINKING AND PROGRAMMING	35
3.	DATA MANAGEMENT -1	15
4.	SOCIETY, LAW AND ETHICS -1	10
	Total	**70**

Part – A: External **70 marks**

UNIT 1: COMPUTER SYSTEMS AND ORGANISATION **10 marks**

Introduction, input devices, output devices, translators, compiler and interpreter, linker and loader

Number Systems*:*

Introduction, Binary Numbers, Octal Numbers, Hexadecimal Number System, Octal and Hexadecimal to Binary and vice-versa, ASCII Code;

Boolean Algebra and Logic Gates: Introduction, Boolean variable, Truth table, Logic gates, Properties of Boolean Algebra, De Morgan's Laws;

Codes: Introduction, ASCII code, ISCII code, Unicode

UNIT 2: COMPUTATIONAL THINKING AND PROGRAMMING-I **35 marks**

Introduction to Python:

Introduction, What is Python? Features of Python, History and Idea, Uses, Environments and Installation.

Running a Python program:

Introduction, Basic Input Output, Running a program, Running a program in Jupyter, Some important references.

Python Fundamentals :

Introduction, Tokens, Keywords and Identifiers, Statements, Comments, Operators, types and examples of operators, Basic data types.

Conditional Statements :

Algorithms, Flow charts and Pseudocodes, Introduction to conditional statements, Selection or branching, the if-elif ladder, Logical operators, The Ternary operator.

Looping :

Introduction, Looping constructs, Range, Break and Continue, Illustrations, while-else, Nesting, Patterns.

Lists :

Introduction, Lists, Accessing Elements: Indexing and Slicing, Mutability, Operators, Traversal, functions.

Tuples :

Introduction, Tuple, Accessing elements of a tuple, Non-mutability, Operators, Traversal, Functions.

Dictionary :

Introduction, Associative arrays and Dictionaries, Displaying elements of a dictionary, Some important functions of dictionaries, Input from the user, Illustrations.

Strings :

Introduction, Loops revised, String Operators, In-build functions, Illustrations.

Sorting :

Introduction, Selection sort, Bubble sort, Insertion sort.

UNIT 3: DATA MANAGEMENT - I **15 marks**

Introduction to Database Management System and MySQL:

Introduction, Keys in a database, Example: Employees Database, File System v/s Database Management System, Introduction to MySQL, Features of MySQL, MySQL installation, DDL, DCL, DML and TCL, Properties of MySQL.

Structured Query Language- I:

Introduction, Pre-Defined Functions in MySQL, Data Types in MySQL, Creating and using Database, Creating table, Describing table.

Structured Query Language- II:

Introduction, Viewing all tables, Select Statements, Updating tables, Cartesian product, Join, Types of Joins, Index, Drop index, Conclusion.

Introduction to NoSQL and MongoDB:

Introduction, the Key-Value store, Column store, Graph database, MongoDB, Installation of MongoDB.

UNIT 4: SOCIETY, LAW AND ETHICS - I **10 marks**

Safely Accessing websites and communication data: Computer threats-

Introduction, Virus, Spyware, Adware, Cookies, Trojans, Spamming, Eavesdropping, Phishing, Introduction to firewalls, Authentication, Conclusion.

Safely Accessing websites and communication data: Cyber Safety-

Introduction, Cyber Bullying, Social media: Common networking sites and appropriate usage, Safely browsing on internet.

Part – B: Practical **30 Marks**

Sl no	Unit Name	Marks
1.	**Lab Test (12 marks)**	
	Python program (60% logic + 20% documentation + 20% code quality)	8
	SQL program (at least 4 queries)	4
2.	**Report file + viva (10 marks)**	
	Report file: Minimum 15 Python Programs and 8 SQL commands	7
	Viva voce (based on the report file)	3
3.	Project (that uses most of the concepts that have been learnt)	8

1. Programming in Python

At least the following Python concepts should be covered in the lab sessions: expressions, conditionals, loops, list, dictionary, and strings. The following are some representative lab

assignments.

- Find the largest and smallest numbers in a list.
- Find the third largest number in a list.
- Find whether a string is a palindrome or not.
- Given two integers x and n, compute x^n.
- Compute the greatest common divisor and the least common multiple of two integers.
- Test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such numbers.

2. Data Management: SQL Commands-

At least the following SQL commands should be covered during the labs: create, insert, delete, select, and join. The following are some representative assignments.

- Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
- Insert the details of a new student in the above table.
- Delete the details of a particular student in the above table.
- Use the select command to get the details of the student with marks more than 80.
- Create a new table(name, date of birth) by joining two tables (student id, name) and (student id, date of birth).
- Create a new table (order ID, customer Name, and order Date) by joining two tables (order ID, customer ID, and order Date) and (customer ID, customer Name, contact Name, country).

Prescribed textbook:

Computer Science with Python –New Age International Publishers by Harsh Bhasin.

Class - XII

COMPUTER SCIENCE

Unit-Wise weightage

Part 'A' External **Time: 3 hrs** **Marks: 70**

Unit		Marks		
		Th	**Pr**	**Total**
1.	OBJECT ORIENTED PROGRAMMING IN C++	30	13	43
2.	DATA STRUCTURE	14	10	24
3.	DATABASE MANAGEMENT SYSTEM AND SQL	8	7	15
4.	BOOLEAN ALGEBRA	8	0	8
5.	NETWORKING AND OPEN SOURCE SOFTWARE	10	0	10
	Total	**70**	**30**	**100**

UNIT 1: OBJECT ORIENTED PROGRAMMING IN C++

REVIEW: C++ covered In Class –XI;

Object Oriented Programming:

Concept of Object Oriented Programming - Data hiding, Data encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies.

Implementation of Object Oriented Programming concepts in C++:

Definition of a class, Members of a class - Data Members and Member Functions (methods), Using Private and Public visibility modes, default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); Declaration of objects as instances of a class; accessing members from object(s), Objects as function arguments - pass by value and pass by reference.

Constructor and Destructor:

Constructor: Special Characteristics, Declaration and Definition of a constructor, Default Constructor, Overloaded Constructors, Copy Constructor, Constructor with default arguments;
Destructor: Special Characteristics, Declaration and definition of destructor;

Inheritance (Extending Classes):

Concept of Inheritance, Base Class, Derived Class, Defining derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, Publicly derived and Protectedly derived class, accessibility of members from objects and within derived class(es);

Data File Handling:

Need for a data file, Types of data files - Text file and Binary file;

Text File: Basic file operations on text file: Creating/Writing text into file, Reading and Manipulation of text from an already existing text File (accessing sequentially);

Binary File: Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file;
Implementation of above mentioned data file handling in C++;
Components of C++ to be used with file handling:
Header file: fstream.h; ifstream, ofstream, fstream classes;
Opening a text file in **in, out,** and **app** modes;
Using cascading operators (>> <<)for writing text to the file and reading text from the file; open(), get(), put(), getline() and close() functions; Detecting end-of-file (with or without using eof() function);
Opening a binary file using **in, out,** and **app** modes;
open(), read(), write() and close() functions; Detecting end-of-file (with or without using **eof()** function); **tellg(), tellp(), seekg(), seekp()** functions.

Pointers:

Introduction to pointer, Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: **new, delete;** Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables

and use of alias; Function call by reference. Pointer to structures: De-reference/Deference operator: *, ->; self-referential structures;

UNIT 2: DATA STRUCTURES

Introduction to data structure, primitive and non-primitive data structure, linear and non-linear structure, static and dynamic data structure.

Arrays:

One and two Dimensional arrays: Sequential allocation and address calculation;

One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection)

Two-dimensional arrays: Traversal, Finding sum/difference of two NxM arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array;

Stack (Array and Linked implementation of Stack):

Introduction to stack (LIFO - Last In First Out Operations)

Operations on Stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression;

Queue: (Circular Array and Linked Implementation):

Introduction to Queue (FIFO - First In First out operations).

Operations on Queue (Insert and Delete) and its Implementation in C++.

UNIT 3: DATABASES MANAGEMENT SYSTEM AND SQL

Database Concepts: Introduction to database concepts and its need.

Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key;

Relational algebra: Selection, Projection, Union and Cartesian product;

Structured Query Language:

General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language;

Data types: NUMBER/DECIMAL, CHARACTER/VARCHAR/VARCHAR2, DATE;

SQL commands:

CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE...SET..., INSERT, DELETE;

SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY;

SQL functions: SUM, AVG, COUNT, MAX and MIN;

Obtaining results (SELECT query) from 2 tables using equi-join, Cartesian Product and Union

Note: Implementation of the above mentioned commands could be done on any SQL supported software on one or two tables.

UNIT 4: BOOLEAN ALGEBRA

Role of Logical Operations in Computing:

Binary-valued Quantities, Logical Variable, Logical Constant and Logical Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idem potent Law, Distributive Law, Absorption Law, Involution law, DeMorgan's Law and their applications;

Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table,

Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimization of Boolean expressions (up to 4 variables);

Application of Computing Logic:

Building up logic circuits using basic Logic Gates (NOT, AND, OR, NAND, NOT).
Use of Boolean operators (AND, OR) in search engine queries.

UNIT 5: NETWORKING AND OPEN SOURCE SOFTWARE

COMMUNICATION TECHNOLOGIES

Evolution of Networking: ARPANET, www, Internet, Interspace;
Different ways of sending data across the network with reference to switching techniques (Circuit, Message and Packet switching).

Data Communication terminologies: Concept of Channel and Data transfer rate (bps, kbps, Mbps, Gbps, Tbps)

Transmission media: Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.

Network devices: Modem RJ11and RJ45 connectors, Ethernet Card, Hub, Switch, Gateway

Network Topologies and types: Bus, Star, Tree; PAN, LAN, MAN, WAN

Network Protocol:TCP/IP,File Transfer Protocol (FTP),PPP,Remote Login (Telnet), Internet
Wireless/Mobile Communication protocol such as GSM, CDMA, GPRS, WLL,
Mobile Telecommunication Technologies: 1G, 2G, 3G and 4G
Electronic mail protocols such as SMTP, POP3
Protocols for Chat and Video Conferencing VOIP
Wireless protocols such as Wi-Fi and WiMax

Network Security Concepts:
Threats and prevention from Viruses, Worms, Trojan horse, Spams.
Use of Cookies, Protection using Firewall;
India IT Act, Cyber Law, Cyber Crimes, IPR issues, Hacking.

WebServices:

WWW, Hyper Text Markup Language (HTML), eXtensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; Protocol Address; Website, Web browser, Web Servers; Web Hosting.

Open Standards
Introduction to open standards and its advantage in development of inter-operable environment.

Open Source Concepts
Proprietory and Open Source Software, Freeware, Shareware, FLOSS/FOSS, GNU,FSF, OSI, W3C

Cloud Computing
Characteristics, layers-client, Application, platform and infrastructure, Deployment models-Private cloud, Public cloud, Community cloud and hybrid cloud, Issues- Privacy, Compliance, Security, Sustainability and abuse.

Class XII (Practicals)

Duration: 3 hours **Total Marks: 30**

1. Programming in C++ **10 marks**

One programming problem in C++ to be developed and tested in Computer during the examination. Marks are allotted on the basis of following:

Logic :	5 Marks
Documentation/Indentation:	2 Marks
Output presentation:	3 Marks

Notes: The types of problems to be given will be of application type from the following topics

Arrays (One dimensional and two dimensional)
Class(es) and objects
Stack using arrays and or linked implementation
- Queue using arrays (circular) and or linked implementation

Binary File operations (Creation, Displaying, Searching and modification)
Text File operations (Creation, Displaying and modification)

2. SQL Commands **5 marks**

Five Query questions based on a particular Table/Relation to be tested practically on Computer during the examination. The command along with the result must be written in the answer sheet.

3. Project Work **5 marks**

The project has to be developed in C++ language with Object Oriented Technology and also should have use of Data files. (The project is required to be developed in a group of 2-4 students)

Presentation on the computer
Project report (Listing, Sample, Outputs, Documentation).
Viva

4. Practical File **5 marks**

Must have minimum 20 programs from the following topics

Arrays (One dimensional and two dimensional, sorting, searching, merging, deletion'& insertion of elements)
Class(es) and objects
Stacks using arrays and linked implementation
Queues using arrays (linear and circular) and linked implementation
File (Binary and Text) operations (Creation, Updation, Query)
Any computational based problems.

15 SQL commands along with the output based on any table/relation:

5. Viva Voce **5 marks**

Viva will be asked from syllabus covered in class XII and the project developed by student.

GUIDELINES FOR PROJECTS (Class XI and XII)

1. Preamble

1.1 The academic course in Computer Science includes one Project in each year.
The Purpose behind this is to consolidate the concepts and practices imparted during the course and to serve as a record of competence.

1.2 A group of 2-3 students as team may be allowed to work on one project.

2. Project content

2.1 Project for class XI can be selected from the topics mentioned in the syllabus or domains on the similar lines

2.2 Project for class XII should ensure the coverage of following areas of curriculum:

a. Flow of control
b. Data Structure
c. Object Oriented Programming in C++
d. Data File Handling

Theme of the project can be:
Any subsystem of a System Software or Tool
Any Scientific or a fairly complex algorithmic situation.
School Management, Banking, Library information system, Hotel or Hospital management system, Transport query system
Quizzes/Games;
Tutor/Computer Aided Learning Systems

2.3 It is suggested to prepare a bilingual (English and other Indian language) user manual part of project file

2.4 The aim of the project is to highlight the abilities of algorithmic formulation, modular programming, optimized code preparation, systematic documentation and other associated aspects of Software Development.

Suggested Reference Books

Computer Fundamentals and Boolean Algebra

1. Rajaraman, FUNDAMENTALS OF COMPUTERS 4th Edition, Prentice Hall of India.
2. Peter Norton, INTRODUCTION TO COMPUTER 4th Edition, Tata McGraw Hill.
3. Thomas C. Bartee, DIGITAL COMPUTER FUNDAMENTALS, McGraw Hill International.

Problem Solving and Programming in C++ ....Pearson?.....

Note: Prior knowledge of C is not required in the learning of C++, eventhough reference about C are made in some of the books.

1. Robert Lafore, OBJECT ORIENTED PROGRAMMING IN TURBO C++, Galgotia Publications Pvt. Ltd.
2. David Parsons, OBJECT ORIENTED PROGRAMMING WITH C++, BPB Publications.
3. Bjarne Stroutrup, THE C++ PROGRAMMING LANGUGE, Adison Wesley.

Data Structures

1. M.A. Weiss, Data Structures and Algorithm Analysis in C++. the Benjamin/Cummings Pub. Co., Inc.
2. Sartaj & Sahni, Fundamentals of Data Structure, Galgotia Book Source.

Database Management System and SQL

1. C.J. Date, DATABASE PRIMER, Adison Wesley.

Communication and Open Source Concepts

1. A.S. Tanenbaum, Computer Network 4th Edition, Prentice Hall of India P. Ltd.
2. Williams Stalling, Data Communication and Networks 5th Edition, Prentice Hall of India P. Ltd.
3. Hancock, Network Concept and Architectures, BPB Publications.
Web References - www.opensource.org, www.w3schools.com

INFORMATICS PRACTICES

Learning Objectives:

- To gain working knowledge of a computer and peripherals
- To understand the application development process.
- To gain programming skill in front-end development
- To gain skills in Relational Database Creation and Management.

Competencies:

- Sound knowledge of computer system
- Familiarity with Application Development process using simple IDEs
- Ability to use, develop and debug programs independently.
- Ability to store and retrieve data using an RDBMS.

DESIGN OF QUESTION PAPER
INFORMATICS PRACTICES

Weightage to different forms of questions:

Sl.no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	5	5
2.	VSA	1	8	8
3.	SA -I	2	11	22
4.	SA - II	4	5	20
5.	LA	5	3	15
	Total		**32**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	21	15
2.	Average	64	45
3.	Difficult	15	10
	Total	**100**	**70**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length of answer	Expected time for each question	Total expected time
1.	Reading Q. Paper	-	-	5 minutes
2.	MCQ	-	2 minutes	10 minutes
3.	VSA	10-20 words	2 minutes	16 minutes
4.	SA- I	25-50 words	5 minutes	55 minutes
5.	SA- II	80-100 words	10 minutes	50 minutes
6.	LA	100-150 words	13 minutes	39 minutes
7.	Revision	-	-	5 minutes
			Total time	**180 minutes**

Scheme of ptions:

Internal choice shall be provided in:

i. 5 (five) questions of 4 marks each

ii. 3 (three) questions of 5 marks each.

The options for internal choice shall be set from the same unit with the same difficulty level.

CLASS - XI
INFORMATICS PRACTICES

Unit-Wise weightage
Part – A: External **70 marks**

Unit	Topic	Marks	
		Theory	Practical
1.	INTRODUCTION TO COMPUTER SYSTEM	10	02
2.	INTRODUCTION TO PROGRAMMING	25	16
3.	RELATIONAL DATABASE MANAGEMENT	30	6
4.	IT APPLICATIONS	05	6
	TOTAL	70	30

Part – A: External **Time: 3 hrs** **70 marks**
UNIT 1: INTRODUCTION TO COMPUTER SYSTEMS **10 marks**

Hardware Concepts:

Computer organization (basic concepts): CPU, Memory (Cache, RAM and ROM), I/O devices, communication bus, ports (serial, parallel), device specific ports.

Input devices:
Keyboard, Mouse, Light pen, Touch Screen, Graphics Tablets, Joystick, Microphone, OCR, Scanner, Smart Card reader, Barcode reader, Biometric sensor, web camera.

Output Devices:
Monitor/Visual Display Unit (VDU), LCD screen, Television, Printer (Dot Matrix Printer, Desk jet/ Inkjet/ Bubble jet Printer, Laser Printer), Plotter, Speaker.

Secondary Storage Devices:
Floppy Disk, Hard Disk, Compact Disk, Magnetic Tape, Digital Versatile Disk (DVD), Flash Drive, Memory cards, Comparative properties of storage media.

Memory Units:
Bit (Binary Digit)/Byte/Binary Variants (Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte)

Security of computer system:
Sources of attack and possible damages, malware-virus and related entities - virus, trogan, spyware, worms, propagation of these entities, virus detection using a tool, digital certificates, digital signature, cookies, firewall, password, file access permissions.

Types of Software:

- **System Software**
  (i) Operating systems, Need for operating system, major functions of Operating System.
  (ii) Language Processors : Assembler, Interpreter and Compiler.
- **Utility Software:**
  Compression tools, disk defragmenter, anti-virus.
- **Application Software :**
  (i) General Purpose Application Software: Word Processor, Presentation Tool, Spreadsheet Package, Database Management System.
  (ii) Specific Purpose application Software: Inventory Management System, Purchasing System, Human Resource Management System, Payroll System, Financial Accounting, Hotel Management and Reservation System etc.

- **Developer Tools:**
  Interpreter / Compilier, Integrated Development Environment (IDE)

UNIT 2: INTRODUCTION TO PROGRAMMING 25 marks

Getting started with Programming using IDE

- Introduction, Rapid Application Development using IDE (Integrated Development Environment),
  Familiarization of IDE using basic Interface components-Label, Text Field, Text Area, Button, Checkbox, Radio Button. (As per appendix B).
- Developing General Application (As per the guidelines at appendix B) - Getting Familiar with Java Swing User Interface components - Frame, Dialog, Option Pane, Label, Text Field, Password Field, Text Area, Button, Check Box, Radio Button, Combo Box, List, Table.
- Basic component handling methods and properties:
  Set Text, Get Text, Add, isSelected, setSelected. (As per appendix B).

Programming Fundamentals

- **Data Types:**
  Concept of data types; Built-in data types - byte, short, int, long, float, double, char, String, Boolean.
- **Variables:**
  Need to use variable, Declaring Variables, Variable Naming Convention, Assigning value to Variable(s).
- **Integer object method:** parseInt
- **Double object method:** parse double, parse float
- **Control Structures:**
  - **Decision Structure**- if, if-else, switch;
  - **Looping Structure**- while, do-while, for;

Programming Guidelines

- **Modular approach:**

Stylistic Guidelines:

Clarity and Simplicity of Expressions, Names, Comments, Indentation; Running and debugging programs, Syntax Errors, Run-Time Errors, Logical Errors.

- **Problem Solving Methodology:**
  Understanding of the problem, Identifying minimum number of inputs required for output, breaking down problem into simple logical steps.

UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM 30 marks

Relational Database Concepts

- **Database Management System**
  Introduction to database concepts: Data base, Relation/Table, attribute/field, Tuple/Rows.
- **Data Types**
  Number, Character and Date
- **Key:**
  Primary Key, Candidate key, Alternate key, Foreign key.
- **Examples of common Database Management System**
  MySQL, INGRES, POSTGRES, ORACLE, DB2, MS SQL, Sybase.

Introduction to MySQL (ANSI SQL 99 standard commands)

- **Classification of SQL Statements**
  - **DML(Data Manipulation Language):**

    SELECT, INSERT, UPDATE, DELETE
  - **DDL(Data Definition Language):**

    CREATE, DROP, ALTER
- **Creating and using a database:**
  SQL CREATE command to create a database, USE command to select a database.
- **Creating a table:**
  CREATE command to create a table, DESC command to display a table structure, INSERT command for: Inserting New Rows, Inserting New Rows with Null Values, Inserting NUMBER, CHAR and DATE Values.
- **Displaying table data:**
  SELECT command for Selecting all the Columns, Selecting Specific Column, Using Arithmetic Operators, Operator Precedence, Defining and using column Alias, Eliminating duplicate values from display (DISTINCT Keyword), Limiting Rows during selection (using WHERE clause), Working with Character Strings and Dates, Working with NULL values.
  Using Comparison Operators - =, <, >, <=, >=, <>, BETWEEN, IN, LIKE (%,_), Logical Operators - AND, OR, NOT, Operator Precedence.
  ORDER BY Clause, Sorting in Ascending/Descending Order, Sorting By Column Alias Name, Sorting On Multiple Columns.
- **Manipulating Data of a Table/Relation:**
  Update command to Change Existing Data of a Table, Delete command for removing row(s) from a Table.
- **Restructuring a table:** ALTER TABLE for adding new column(s), deleting a column.

Functions in MySQL

- **String Function:**
  CHAR(), CONCAT(),INSTR(), LCASE(), LEFT(), LOWER(), LENGTH(), LTRIM(), MID(), RIGHT(), RTRIM(), SUBSTR(), TRIM(), UCASE(), UPPER().
- **Mathematical Functions:**
  POWER(), ROUND(), TRUNCATE().
- **Date and Time Functions:**
  CURDATE() , DATE(), MONTH(), YEAR(), DAYNAME(), DAYOFMONTH(), DAYOFWEEK(), DAYOFYEAR(), NOW(), SYSDATE().

UNIT 4: IT APPLICATIONS **5 marks**

- **e-Governance:**
  Definition, Benefits to citizens, e-Governance websites and their salient features and societal impacts; e-Governance challenges.
- **e-Business:**
  Definition, Benefits to customers and business, e-Business websites and their salient features and societal impacts, e-Business challenges.
- **e-Learning:**
  Definition; Benefits to students (Learners), Teachers (Trainers) and School (Institution) Management; e-Learning websites and their salient features and societal impacts; e-Business Challenges.
  In each of the above domains, identify at least two real-life problems, list the input(s) required for the expected output(s), and describe the problem solving approach.

Part – B: Practical		Marks: 30
	Description	**Marks**
1	**Problem solving using Java**	**12**
2	**SQL Queries**	**4**
3	**Practical Record**	
	• Productivity Tools	**8**
	• Simple Problems using Java	
	• SQL Queries	
	• IT Applications	
4	**Presentation on contributions by computer scientists**	**2**
5	**Viva Voce**	**4**
	Total	**30**

Evaluation of Practical Examination

1. Problem solving using Java

Student is required to solve programming problems based on all concepts covered in theory throughout the year and maintain a record of these in the practical file. Student will be given a problem to be solved using Java during final practical examination to be conducted at the end of the academic session

2. SQL Queries

Students will be trying out SQL queries in MySQL throughout the year along with course coverage in theory. Student will be asked to write 4 queries based on one or two tables during final practical examination to be conducted at the end of the academic session

3. Practical Record File

A practical record file is required to be created during the entire academic session. It should be duly signed by the concerned teacher on regular basis and is to be produced at the time of Final Practical Examination for evaluation. It should include the following:

- Print out of at least 2 documents with use of Different Style, Page Setting/Formatting, Bulleting/Numbering and Tabulation.
- Print out of at least 2 spreadsheets with simple calculations, basic functions, macros and graphs/charts.
- At least 10 solutions of simple problems using IDE based Java (refer to Appendix 'A' & 'B').
- At least 3 IT applications - problems solving framework.
- At least 20 SQL queries.

4. Presentation

Group of 3-4 students will prepare presentation(s) on salient contributions by atleast two computer scientist and their brief life sketch.

5. Viva Voce

Students will be asked oral questions during practical Examination to be conducted at the end of the course. The questions will be from the entire course covered in the academic session. Out of 4 marks, 2 marks are allotted to test student's understanding of basic computer hardware and their functions.

Prescribed textbook:
Informatics Practices – ***Saraswati House Pvt. Ltd.***
by Reeta Sahoo & Gagan Sahoo

CLASS -XII
INFORMATICS PRACTICES

Unit-Wise weightage

Part 'A' External **Time: 3 hrs** **Marks: 70**

Unit	Topic	Marks	
		Theory	Practical
1.	NETWORKING AND OPEN STANDARDS	10	02
2.	PROGRAMMING	25	16
3.	RELATIONAL DATABASE MANAGEMENT SYSTEM	30	8
4.	IT APPLICATIONS	05	4
	TOTAL	**70**	**30**

UNIT 1: NETWORKING AND OPEN STANDARDS

Computer Networking:

- **Networking:** a brief overview.
- **Communication Media:**
  - **Wired Technologies:** Co-Axial, Ethernet Cable, Optical Fiber.
  - **Wireless Technologies:** Blue Tooth, Infrared, Microwave, Radio Link, Satellite Link.
- **Network Devices:** Hub, Switch, Repeater, Gateway - and their functions.
- **Types of network:** LAN, MAN, WAN, PAN.
- **Network Topologies:** Star, Bus, Tree.
- **Network Protocols:** HTTP, TCP/IP, PPP.
- **Identifying computers and users over a network:** Basic concept of domain name, MAC (Domain Control) and IP address, domain name resolution.
- **Network security:** denial of service, intrusion problems, snooping.

Open Source Concepts:

- **Open Source Software (OSS):** common FOSS/FLOSS examples (e.g. Gnu/Linux, Firefox, OpenOffice, Java, Netbeans, MySQL), common open standards (WWW, HTML, XML, ODF, IP, TCP)
- **Indian Language Computing:** character encoding, UNICODE, different types of fonts (open type vs true type, static vs dynamic), Entering Indian Language Text - phonetic and key map based.

UNIT 2: PROGRAMMING

Review of Class XI

Programming Fundamentals

(Refer to Appendix A for sample guidelines of GUI Programming, and Appendix B for Swing Control Methods & Properties)

- **Basic concept of:**
  - Access specifier for classes.
  - Members and methods.
  - Concept of package.
  - **Inheritance:** need and implementation, Method Overloading and Overriding, Abstract Class and Interfaces, use of interface.

- **Commonly used libraries:**
  - **String class and methods:** toString(), concat(), length(), toLowerCase(), toUpperCase(), trim(), substring()
- **Math object:** pow(), round()
  Accessing MySQL database using ODBC/JDBC to connect with database.
- **Web application development:** URL, Web Server, Communicating with the web server, concept of Client and Server Side.
- **HTML based web pages covering basic tags:** - HTML, TITLE, BODY, H1..H6, Paragraph (P), Line Break (BR), Section Separator (HR), FONT, TABLE, LIST (UL, OL), FORM, Creating and accessing static pages using HTML and introduction to XML.

UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM

Review of RDBMS from Class XI

- **Database Fundamentals**
  - Concept of Database Transaction, Committing and cancelling a Transaction using COMMIT and ROLLBACK.
- **Grouping Records:**
  - GROUP BY, Group functions - MAX(), MIN(), AVG(), SUM(), COUNT(); using COUNT(*), DISTINCT clause with COUNT, Group Functions and Null Values,
- **Displaying Data From Multiple Tables:**
  - Cartesian product, Union, concept of Foreign Key, Equi-Join
- **Creating a Table:**
  - Using PRIMARY KEY and NOT NULL constraints, adding a Constraint, enabling Constraints, Viewing Constraints, Viewing the Columns Associated with Constraints using DESC Command.
- **ALTER TABLE:**
  - Deleting a column, Modifying data types of a column, adding constraints, enabling constraints and dropping constraints.
- **DROP Table for deleting a table.**

UNIT 4: IT APPLICATIONS

- **Front-end Interface:**
  - Introduction; content and features; identifying and using appropriate component (Text Box, Radio Button, CheckBox, List) for data entry, validation and display.
- **Back-end Database:**
  - Introduction and its purpose; exploring the requirement of tables and its essential attributes;
- **Front-End and Database Connectivity:**
  - Introduction, requirement and benefits, Demonstration and development of appropriate Front-end interface and Back-end Database for e-Governance, e-Business and e-Learning applications.
- **Impact of ICT on Society:**
  - Social and Economical benefits and Informania.

Class XII (Practical)

S.No.	Description	Marks
1	**Problem solving using Java**	**10**
2	**SQL Queries**	**4**
3	**Practical Record**	**6**
	• **Simple Problems using IDE Java**	
	• **SQL Queries**	
	• **IT Applications**	
4	**Project Work**	**4**
5	**Viva Voce**	**6**
	Total	**30**

Evaluation of Practical Examination

1. Problem Solving using Java

Student is required to solve programming problems based on all concepts covered in theory throughout the year and maintain a record of these in the practical file. Student will be given a problem to be solved using Java during final practical examination to be conducted at the end of the academic session.

2. SQL Queries

Students will be trying out SQL queries in MySQL throughout the year along with course coverage in theory.

Student will be asked to write 4 queries based on one or two tables during final practical examination to be conducted at the end of the academic session

3. Practical Record File

A practical record file is required to be created during the entire academic session. It should be duly signed by the concerned teacher on regular basis and is to be produced at the time of Final Practical Examination for evaluation. It should include the following:

At least 12 solutions of simple problems and 2 IT applications using IDE based Java (refer to Appendix 'A' & 'B')

At least 24 SQL queries based on one and/or two tables

Solution of at least 2 simple problems incorporating Java Application & Database connectivity

4. Project File

Students in group of 2-3 are required to work collaboratively to develop a project using Programming and Database skills learnt during the course. The project should be an application with GUI front-end based on any one of the following domains - e-Governance, e-Business and e-Learning

5. Viva Voce

Students will be asked oral questions during practical Examination to be conducted at the end of the course. The questions will be from the entire course covered in the academic session.

Prescribed textbook:

Informatics Practices – ***Saraswati House Pvt. Ltd.***
by Reeta Sahoo & Gagan Sahoo

ENVIRONMENTAL EDUCATION

Objectives:

- to develop an in-depth understanding of various environmental issues and concern of national and global importance;
- to develop a balanced view of the relationship between environment and development;
- to understand basic concepts related to sustainable development vis-à-vis improvement of quality of life;
- to develop a deeper concern for the environment and a sense of commitment and responsibility to take proactive action;
- to appreciate the variety in living organism and recognize India as a mega diversity nation;
- to appreciate the role of the individual, community, national and international agencies in resolving environmental problems;
- to practise ways of bringing about qualitative improvement in the environment by assuming leadership role;
- to identify self with one's environment with an attitude to personally contribute towards its improvement;
- to respect customs and traditions related to local conservation practices and accept indigenous eco-friendly technologies;
- to develop skills to undertake and participate in investigative studies on various environmental issues; and
- to motivate them and participate in social and community activities in dealing with environmental problems.

DESIGN OF QUESTION PAPER
ENVIRONMENTAL EDUCATION

Weightage to different forms of questions:

Sl. no.	Forms of questions	Marks for each question	No. of questions	Total marks
1.	MCQ	1	10	10
2.	SA-I	2	7	14
3.	SA-II	4	5	20
4.	LA-I	6	3	18
5.	LA-II	8	1	8
	Total		**26**	**70**

Weightage level of questions:

Sl.no.	Level	Percentage	Marks
1.	Easy	20	14
2.	Average	60	42
3.	Difficult	20	14
	Total	**100**	**70**

The expected length of answer and time to be taken under different forms of questions shall be as follows:

Sl.no.	Forms of questions	Expected length of answer	Expected time for each question	Total expected time
1.	Reading	-	-	10 minutes
2.	MCQ	-	1 minute	10 minutes
3.	SA - I	30-50 words	5 minutes	35 minutes
4.	SA - II	50-100 words	10 minutes	50 minutes
5.	LA - I	100-150 words	15 minutes	45 minutes
6.	LA - II	150-200 words	20 minutes	20 minutes
7.	Revision	-	-	10 minutes
			Total time	**180 minutes**

Scheme of Options:

Internal choice shall be provided in:

i. 3(three) questions of 6 marks each

ii. 1(one) question of 8 marks.

CLASS - XI
ENVIRONMENTAL EDUCATION

Unit-Wise weightage

Part – A: External **Time: 3 Hrs** **Marks: 70**

Unit		Marks
I.	Man and Environment	**16**
II.	Environment and Development	**15**
III.	Environmental Pollution and Global Issues	**27**
IV.	Energy	**12**
	Total	**70**
Part – B: Internal – Practical		**30**
	Grand total	**100**

Part – A: External

Unit I: Man and Environment **16 marks/30 Periods**

(i) Dimensions of environment-physical, biological and social.

(ii) Human being as a rational and social partner in environmental actions.

(iii) Society and environment in India; Indian traditions, customs and culture – past and present.

(iv) Population and environment.

- Environmental problems of urban and rural areas.
- Natural resources and their depletion.
- Stress on civic amenities; supply of water and electricity, waste disposal, transport, health services.
- Vehicular emissions.
- Urbanization – land use, housing, migrating and floating population.

Unit II: Environmental and Development 15 marks/28 Periods

(i) Economics and social needs – as basic considerations for development.
(ii) Agriculture and industry as major sectors of development.
(iii) Social factors affecting development – poverty, affluence, education, employment, child marriage and child labour; human health – HIV/AIDS, social cultural and ethical values.
(iv) Impact of development on environment – changing pattern of land use; land reclamation, deforestation, resource depletion, pollution and environmental degradation.
(v) Impact of liberalization and globalization on – agriculture and industries, dislocation of manpower and unemployment, implications for social harmony.
(vi) Role of society in development and environment – public awareness through education, eco-clubs, population education programme, campaigns, public participation in decision making.

Unit III: Environmental Pollution and Global Issues 27 marks/50 Periods

(i) Air, water (fresh and marine), soil pollution – sources and consequences.
(ii) Noise and radiation pollution – sources and consequences.
(iii) Solid, liquid and gaseous pollutants.
(iv) Handling of hazardous materials and processes; handling and mangement of hazardous wastes.
(v) Ozone layer depletion and its effect.
(vi) Greenhouse effect; global warming and climatic changes and their effects on human society, agriculture, plants and animals.
(vii) Pollution related diseases.
(viii) Disasters – natural (earthquakes, droughts, floods, cyclones, landslides) and man-made (technological and industrial); their impact on the environment; prevention, control and mitigation.
(ix) Strategies for reducing pollution and improving the environment.

Unit IV: Energy 12 marks/22 periods

(i) Changing global patterns of energy consumption – from ancient to modern times.
(ii) Energy consumption as measure of quality of life.
(iii) Rising demand for energy, gap between demand and supply (Indian context).
(iv) Conventional energy sources – fossil fuels and firewood, potential (Indian context) and limitations of each source, methods of harnessing and environmental consequences and their use.
(v) Non-conventional energy sources – types of non-conventional sources (bio-mass, solar, wind, ocean, hydel, geothermal, nuclear), potential (Indian context) and limitations of each source, methods of harnessing and their environmental consequences, need to promote non conventional energy sources.
(vi) Conservation of energy sources-efficiency in production, transportation and utilization of energy.
(vii) Planning and management of energy; future sources of energy hydrogen, alcohol, fuel cells.
(viii) Enhancing efficiency of the devices and optimizing energy utilization.

Part – B: Internal - Practical	Marks 30
I. Case study I	10
II. Case study II	10
III. Project	10
Total	**30**

Prescribed textbook:

Textbook of Environmental Education Class XI – Goyal Brothers Prakashan.

CLASS XII
ENVIRONMENTAL EDUCATION

Unit-Wise weightage

Part – A: External **Time: 3 Hrs** **Marks: 70**

Unit		Marks
I.	Man and Environment	**16**
II.	Environment and Development	**15**
III.	Environmental Pollution and Global Issues	**27**
IV.	Energy	**12**
	Total	**70**
Part – B: Internal – Practical		**30**
	Grand total	**100**

Part – B: Internal - Practical	Marks 30
I. Case study I	10
II. Case study II	10
III. Project	10
Total	**30**

CLASS XII
ENVIRONMENTAL EDUCATION

Unit – I ***Biodiversity***

- Concept and value of biodiversity.
- Types of biodiversity – species, eco and genetic.
- Balance in nature.
- Biodiversity for sustenance of mankind.
- Resource limitations.
- Ecological role of biodiversity.
- Interdependence between different species.
- India as a mega-diversity nation.
- Economic potential of biodiversity.

- Loss of biodiversity – threatened, endangered and extinct species.
- Strategies for conservation of biodiversity – in-situ and ex-situ.
- Mitigating people-wildlife conflict.

Unit –II Environmental Management

Need for environmental management vis-à-vis development.

Aspects of environmental management – ethical, economic, technology and social.

Legal provisions for environmental management.

Approaches for environmental management – economic policies, environmental indicators, setting of standards, information exchange and surveillance.

Unit –III Sustainable Development

Concept of sustainable development. - Concept of sustainable consumption.

Need for sustainable development for improving quality of life for the present and future.

Challenges for sustainable development - social, political and economic considerations.

Support base for sustainable development – political and administrative will, dynamic and flexible policies, appropriate technologies, comprehensive review and revision mechanism, humane approach. - Developing skilled manpower.

Role of individual and community.

Role of national and international agencies (both government and non-governmental).

Unit – IV Sustainable Agriculture

Need for sustainable agriculture.

Green Revolution – impact on environment.

Importance of soil for crops.

Irrigation systems, use of manure and fertilizers.

Crop production – major plant pests and diseases, measures for their control – agrochemicals.

Impact of agrochemicals on environment.

Elements of sustainable agriculture – mixed farming, mixed cropping, crop rotation, biological and economic considerations, use of bio-fertilizers and bio pesticides, biological pest control, integrated pest management.

Applications of biotechnology in crop improvement.

Management of agricultural produce – storage, preservation, transportation and processing.

Prescribed textbook:

Textbook of Environmental Education Class XII – Goyal Brothers Prakashan.

Work & Art Education and Physical & Health Education

Unit 1: Physical Education

Sl.no.	Chapter	Contents	Case study/ activity /Group discussion
1	Concept of Physical Education	1. Meaning and definition 2. Aims & objectives 3. Need and importance 4. Lifestyle management through sports	Case study /activity/Group discussion: (*To give example*)
2	Career in Physical Education	1. Physical education as a profession 2. Career options - teaching, coaching, health related careers, performance related careers etc	Case study /activity/Group discussion: (*To give example*)
3	Measurement in Sports	1. Meaning 2. Importance of measurement in Physical Education & sports 3. Body Mass Index (BMI) 4. Waist-hip ratio 5. Measurement of Heart Rate (resting and after exercise)	Case study /activity/Group discussion: (*To give example*)
4	Physical Fitness and Wellness	1. Meaning and importance 2. Methods for improving Physical Fitness & Wellness 3. Factors affecting Physical Fitness & Wellness	Case study /activity/Group discussion: (*To give example*)
5	Postures	1. Meaning and concept of Correct Postures 2. Advantages 3. Common Postural Deformities 4. Physical activities as corrective measures	Case study /activity/Group discussion: (*To give example*)
6	Training Methods	1. Meaning and concept 2. Principles of Sports Training 3. Flexibility Development 4. Strength Development 5. Endurance Development 6. Speed Development	Practical /Activities
7	Exercises of warming up and conditioning	1. Introduction 2. Types of warming up and conditioning 3. Suggested warm up and conditioning for: • Lawn tennis /football/basketball/cricket	
8	Common Sports injuries	1. Introduction 2. Various types of common sports injuries with prevention 3. Case study/activity/Group discussion: (*To give example*)	
9	Athletics	1. History 2. General Rules of athletics 3. Specifications of playfields and related sports equipments • Shot-put, discus throw, javelin throw, long jump, triple jump, high jump, pole vault 4. Important tournaments	
10	Common Games & Sports	**Lawn Tennis, Table Tennis, Basketball & Volleyball** 1. History 2. General Rules 3. Specifications of playfields and related sports equipments 4. Fundamental skills 5. Terminology 6. Important tournaments 7. Sports awards	

11	Adventure	**Hiking Trails** 1. Introduction 2. Basics of Hiking 3. Socio-cultural activities 4. Explore the region/mountains by foot 5. Activity: (*To explain*) Walking paths, Half day hike, full day hike.	Activity: Create a campaign to encourage cycling and walking.
		Camping • Meaning • Purpose • Different forms of camping • Various camping equipments • Activity: (*To explain*) Literacy camp - 'Each one teach one'	• Activity: Organize a cultural, recreational or educational camping programme with some social and educational message.
12	NCC and NSS	1. Introduction 2. Purpose 3. Principles 4. Various activities 5. Benefits 6. How to join	

Unit 2: Health Education

13	Healthy Habits	1. Concept of Health (physical, social, mental) 2. Healthy habits: Personal hygiene, tips for common cold/flu, home cleaning tips, etc 3. Periodic Health Check-Up 4. Case study/activity/Group discussion: (*To give example*)	
14	Meal planning and preparation	1. Introduction 2. Planning for different types of meal 3. Activities: Naga dish • Chicken with dried bamboo shoots • Pork with fresh bamboo shoots • Fish with fresh bamboo shoots • Naga Khouvie (Allium chinense) dried beef chutney 4. Activities: (*To explain with recipe*) Preparation of: • snack/dish rich in nutrient. • snack/dish low in calorie. • one meal (breakfast, lunch, tea time, dinner) for infants, adolescent, old person, pregnant or lactating mother. • biscuits (sweet/salty), cakes, doughnuts.	Activity: • Scrap book - pasting of nutrition, health articles and recipes from magazines & newspapers. • Report writing on cooking local cuisine.
15	Life Skills for Adolescence Education	1. Introduction 2. Essential life skills: Critical thinking, decision making, leadership, negotiation, organising, delegation, conflict resolution, etc. 3. Personal skills: Case study/activity/Group discussion (*To give example*) 4. Character building skills: Case study/activity/Group discussion (*To give example*)	
16	Self Esteem and Peer Pressure	1. Introduction 2. High self esteem, low self esteem, peer pressure 3. How to avoid negative peer pressure and say 'No': Case study/activity/Group discussion (*To give example*) 4. Stress management: Case study/activity/Group discussion (*To give example*)	

Unit 3: Work Education

17	Plantation and environmental activities: Permaculture	1. Introduction of Permaculture 2. Principles: The link between sustainable living and environmental conservation. 3. Common practices: Agroforestry, Rainwater harvesting, Soil conservation, Enhancing tree cover, biomass generation, Sheet mulching, Composting bin, etc 4. How to establish a permaculture garden in school.	Activity: (*To explain with required materials*) • Rainwater harvesting • Bee-keeping for gardeners • Organise a recycling fair in school.
18	Community Service	1. Introduction 2. Community service learning and its benefits to volunteers 3. Community service ideas for schools: • Donate old clothes or household goods to the needy; • Donate old children's books, novels and other reading materials to the needy. • Visit old age homes and destitute children homes; • Offer to do household chores for an elderly neighbour; • Volunteer to clean neighbourhood or specific public area; • Volunteer to clean up trash at a public event; • Visit a rehabilitation centre with special needs children. Volunteer to help; etc.	Activity: • 'Clean & Green' programme -Volunteer to clean neighbourhood drainages with plantation drives. • Exhibition-cum-sale of food products/crafts made by the students for a social cause.
19	Disaster Management including mock drills	1. Meaning 2. Types of Disaster: Recall from previous classes (brief) 3. Prevention, preparedness, relief, recovery • flood and • landslides	Activity : (*To explain with required steps*) • Mock drills/relief in case of flood • Mock drills/relief in case of landslide
20	Craft	1. Introduction 2. Different types of craft work • Make soft toys/puppets • Prepare T.V. cover/refrigerator top cover using net, laces, clothes. Decorate it. • Weave basket using plastic • Paper & glue crafts • Beads & jewellery crafts • Bamboo craft: Make bamboo cart, bamboo tong, bamboo tray & bamboo planters.	Activities: (*To explain with steps and required materials*)
21	Food processing and catering management	1. Introduction 2. Common methods of processing and preserving food 3. Benefits & drawback 4. Sanitation and safety requirement of catering unit • Market survey and observations on packaging materials/containers used for packing fruits and vegetables. Analyze various packaging mater ials for processed food. • Preparation of pickles (lemon, mango, mixed vegetables, etc). Pack, label and store it. • Preparation of jelly and marmalade. Pack, label and store it.	Activity: • Plan a single meal - Naga, Indian, Chinese, Italian, Continental. Cook and serve dishes. • Visit a bakery/confectiona ry unit and report.

Unit 4: Art Education

22	Music	1. Introduction 2. Different types of music (in brief) 3. Different types of instruments (in brief) 4. Basic music skills: Ear training or aural skills, Absolute pitch, fingering, Modulation	Activity: • Assemble a choir with a director and an accompanist and present a choral piece. • Form a musical band and present item(s) at the school assembly or at a school event. • Learn to folk songs and present item(s) at the school assembly or at a school event. Group discussion: Music tastes discussion and presentation.
23	Sketching	1. Basic techniques 2. Materials required	Activity: (*To explain with required steps*) • Pencil sketches
24	Sculpting	1. Basic techniques 2. Materials required	Activity: (*To explain with required steps*) • Sculpt an object using soap/plaster of Paris/play dough
25	Drama	1. Different types 2. Scope and future prospects of drama 3. Creative drama Activity: (*To give example*) Produce an anti-crime, anti-drug, anti-violence play.	Activity: Write and produce a play about a current issue. • Character creation through puppetry - Create a play for puppets (made by students in the Crafts class).

Unit 5: Civic Sense

26	Civic sense	1. Introduction 2. Importance 3. Civic skills 4. Activity/Case study/ Group discussion (*To give example*)	Group Discussion: **Participation in the governance of classroom/school as an integral part of civic education.** How can students learn to interact, monitor and influence school and public policies; how their voice matters in school rules and disciplinary procedures; and how as a citizen has the rights and responsibilities that accrue to citizens in a constitutional democracy.

27	Civic education	1. Introduction 2. Key areas: Citizenship, Cultural heritage, Indian Constitution, Democracy, Voters Education (SVEEP), Gram Sabha, Transparency in Governance, Gender, Social Harmony, Thinking and Negotiation Skills 3. Dangers of civic disengagement in society (political disinterest)	Activity/Case study/ Group discussion (*To give example*)

Unit 6: Peace Education

28	Peace Education	1. Meaning 2. Objectives of Peace Education 3. Expected results 4. Gandhi's philosophy of peace	Activity/Case study/ Group discussion (*To give example*)
29	National Integration	1. Meaning 2. Unity in diversity in Indian context with special reference to North-eastern states	Activity/Case study/ Group discussion (*To give example*)

Unit 7: Career Guidance

30	Different reer options	**Arts/Humanities:** 1. Subject of study and Career options (jobs) related to the following career interests: • Mechanical • Scientific • Business • Aesthetic • Social • Clerical • Outdoors ***Note for publisher/writer - For example:*** A career option for *Mechanical* under *Arts/Humanities* ○ Career option: **Air Force Officer** Indian Air Force is one of the major air arms in the world and can boast of the best trained men and material force, which is engaged in defence services, guarding the country's skies against external aggression from air. ○ Stream: Science, Commerce, Humanities/Arts ○ Mandatory Subjects: Mathematics, Physics ○ Career Interest: Mechanical ○ Academic Difficulty: High	
		Science: 1. Subject of study and Career options (jobs) related to the following career interests: • Mechanical • Scientific • Business • Aesthetic • Social • Clerical • Outdoors	
		Commerce: 1. Subject of study and Career options (jobs) related to the following career interests: • Mechanical • Scientific • Business • Aesthetic • Social • Clerical • Outdoors	

Chapter – wise distribution for Class XI & XII

Unit	Chapters for Class XI	Chapters for Class XII
1	1 - 6	7 - 12
2	13 & 15	14 &16
3	17 & 19	18 , 20 & 21
4	22 & 23	24 & 25
5	26	27
6	28	29
7	30	

Prescribed textbook:

Life Skills Education - Headword Publishing Company Higher Secondary