

2022

Electronics & Hardware (Vocational)

Total marks : 50

Time : 2 hours

General instructions :

- i) *Approximately 15 minutes is allotted to read the question paper and revise the answers.*
- ii) *All questions are compulsory except Q. nos.18 to 23 where general option is given.*
- iii) *The question paper consists of 23 questions.*
- iv) *Marks allocated to every question are indicated against it.*

N.B: *Check to ensure that all pages of the question paper are complete as indicated on the top left side.*

1. **Choose the correct answer from the given alternatives:** **10x1=10**

- i. Electricity is generated at power plants and moves through a complex system known as
 - (a) transformer
 - (b) motor
 - (c) grid
 - (d) starter
- ii. Which of the following is not a stage of active listening?
 - (a) receiving
 - (b) understanding
 - (c) non-responding
 - (d) evaluating
- iii. Individuals who love interacting with people and are generally talkative are considered as
 - (a) extroverts
 - (b) introverts
 - (c) self conscious
 - (d) agreeable
- iv. A company that is in its first stage of its operation is known as
 - (a) developer
 - (b) start ups
 - (c) manufacturer
 - (d) investors
- v. During short circuit, MCB is designed to operate at less than
 - (a) 1.5 seconds
 - (b) 2.5 seconds
 - (c) 1.5 milliseconds
 - (d) 2.5 milliseconds
- vi. In power plug connections, black wire indicates
 - (a) phase
 - (b) neutral
 - (c) earth
 - (d) positive
- vii. A device that opens or closes the contacts to cause the operation of the other electric control is known as
 - (a) relay
 - (b) contactor
 - (c) energy meter
 - (d) coil
- viii. What is the minimum distance to maintain from overheadlines?
 - (a) 10 ft
 - (b) 20 ft
 - (c) 30 ft
 - (d) 40 ft
- ix. Which is the short cut key to underline text in a spreadsheet?
 - (a) ctrl+b
 - (b) ctrl+i
 - (c) ctrl+l
 - (d) ctrl+u

- x. Banana leaf and paper plates which are easily disposable, are an example of
 - (a) reusing scrap material
 - (b) eco friendly material
 - (c) ensuring quality control
 - (d) waste management

Answer the following questions in one word or one sentence:

- 2. Write any two benefits of green jobs. 1
- 3. What is a starter? 1
- 4. What is a panel board? 1
- 5. List any two types of switchboards. 1
- 6. What is the working principle of relay? 1
- 7. Name the device that is used to cut off power in an emergency. 1
- 8. Why is feedback important in communication? 1
- 9. State any one way to manage stress. 1

Answer the following questions in 20-50 words:

- 10. List any two advantages of AC generators. 2
- 11. What is the main function of miniature circuit breakers (MCB)? 2
- 12. Draw the power point wiring diagram. 2
- 13. Give any two applications of potential transformer. 2
- 14. List any two main hazards of working with electricity. 2
- 15. State the role of switchgear. 2
- 16. Write the basic operation of contactor. 2
- 17. Mention any two advantages of presentation software. 2

Answer any four from the following questions in 60-100 words:

- 18. Explain the three phase system with the help of a diagram. 2+2=4
- 19. Explain the working principle of a circuit breaker. 4
- 20. What is PLC? Explain briefly the two types of PLC. 1+3=4
- 21. Explain the working of energy meter. 4
- 22. Explain any two common electrical hazards in the workplace and the tips to mitigate the risks. 2+2=4
- 23. Draw the wiring diagram of a switchboard and explain it briefly. 2+2=4
