

2021

**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 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. It refers to the flow of electric charge carried by electrons as they jump from atom to atom.
  - (a) Electric circuit
  - (b) Electric current
  - (c) Voltage
  - (d) Watts
- ii. A typical household electrical outlet is
  - (a) 5A
  - (b) 10A
  - (c) 15A
  - (d) 20A
- iii. The terminals of FET are
  - (a) gate, source, drain
  - (b) gate, anode, cathode
  - (c) gate, source, cathode
  - (d) gate, drain, cathode
- iv. Which of the following is typically marked with 'Q' on a circuit board?
  - (a) Transformers
  - (b) Transistors
  - (c) Capacitors
  - (d) Resistors
- v. The safety distance from overhead power transmission lines is
  - (a) 5m
  - (b) 8m
  - (c) 12m
  - (d) 15m
- vi. Which of the following connection is done in house wiring?
  - (a) Parallel
  - (b) Series
  - (c) Series-parallel
  - (d) Batten wiring
- vii. Which type of switch is required for staircase wiring?
  - (a) Four way switch
  - (b) Three way switch
  - (c) Two way switch
  - (d) One way switch
- viii. Which method is used to receive information from the sender?
  - (a) Listening
  - (b) Speaking
  - (c) Reading
  - (d) Writing
- ix. Which menu option has the commands such as Save, Print and Close?
  - (a) Insert
  - (b) File
  - (c) Tools
  - (d) Format
- x. It means not to give up and keep going even when a difficult situation comes up.
  - (a) Self confidence
  - (b) Independence
  - (c) Perseverance
  - (d) Positive attitude

**Answer the following questions in one word or one sentence:**

- 2. What is voltage? 1
- 3. What is a diode? 1
- 4. What are inductors? 1
- 5. What is skin effect? 1
- 6. What is wire stripper? 1
- 7. Mention any two basic principles of professional communication skills. 1
- 8. What is a word processor? 1
- 9. What is entrepreneurship? 1

**Answer the following questions in 20-50 words:**

- 10. State Ohm's law and write its formula. 1+1=2
- 11. What is transistor? Name any two types of transistor. 1+1=2
- 12. What is electrical cable? Mention any two types of electrical cable. 1+1=2
- 13. What are the injuries that results from electrical current? 2
- 14. Name any two electronic measuring tools and write their functions. 1+1=2
- 15. What is conduit wiring? 2
- 16. Write any two importance of personal hygiene. 2
- 17. What is sustainable development? Give example. 1+1=2

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

- 18. What is resistor? State any three laws of resistance. 1+3=4
- 19. What is earthing? Briefly explain the two types of earthing. 1+3=4
- 20. Write any four safety tips for working with power tools. 4
- 21. Explain electromechanical assembly. 4
- 22. Write any four considerations to be followed in electrical wiring. 4
- 23. What is electrical hazard? Mention any three guidelines for working on or near electrical equipment and conductor. 1+3=4

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