

Total number of printed pages : 2

NB-T/E&H(V)

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. The heating element is made from
  - (a) Iron
  - (b) Copper
  - (c) Nichrome
  - (d) Nickel
- ii. It is an equipment used for finding out faults in electric bell.
  - (a) Series test lamp
  - (b) Parallel test lamp
  - (c) Tester
  - (d) Multimeter
- iii. The core of a transformer is made of
  - (a) Copper
  - (b) Silicon
  - (c) Silicon steel
  - (d) Aluminium
- iv. A fully charged lead acid battery cell has a specific gravity of
  - (a) 0.25
  - (b) 0.5
  - (c) 1.15
  - (d) 1.25
- v. Bridge rectifier circuit converts
  - (a) AC to AC supply
  - (b) DC to DC supply
  - (c) AC to DC supply
  - (d) DC to AC supply
- vi. The rating of MCB is normally
  - (a) 0.2 to 30 Amp
  - (b) 0.2 to 60 Amp
  - (c) 0.6 to 30 Amp
  - (d) 0.6 to 60 Amp
- vii. Which of the following is a type of non formal greeting?
  - (a) Hello
  - (b) Good morning
  - (c) What's up?
  - (d) Hi
- viii. Dressing and grooming are important because they help us to look
  - (a) smart
  - (b) intelligent
  - (c) wiser
  - (d) comfortable
- ix. To connect to the internet, the computer has to be connected to the
  - (a) Internet Society
  - (b) Internet Architecture
  - (c) Internet Service Provider
  - (d) Large Area Network
- x. What does conservation of energy mean?
  - (a) Using energy efficiently
  - (b) Banning the use of energy
  - (c) Promoting power plants
  - (d) Planting more trees

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

- |                                                               |   |
|---------------------------------------------------------------|---|
| 2. What is immersion heater?                                  | 1 |
| 3. Which type of switch is used to operate the electric bell? | 1 |
| 4. What is full wave rectifier?                               | 1 |
| 5. What is an inverter?                                       | 1 |
| 6. What is an emergency light?                                | 1 |
| 7. What is CFL?                                               | 1 |
| 8. What is an introduction?                                   | 1 |
| 9. What is internet?                                          | 1 |

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

- |                                                                  |   |
|------------------------------------------------------------------|---|
| 10. Draw the circuit diagram of electric bell.                   | 2 |
| 11. Write any two advantages of LED.                             | 2 |
| 12. What is step-up transformer?                                 | 2 |
| 13. Name any two applications of DC power supply.                | 2 |
| 14. Write two uses of multimeter.                                | 2 |
| 15. Write two advantages of solar cell.                          | 2 |
| 16. Mention any two points of importance about personal hygiene. | 2 |
| 17. Write two characteristics of entrepreneurship.               | 2 |

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

- |                                                                                           |       |
|-------------------------------------------------------------------------------------------|-------|
| 18. Explain the working principle of electric geyser. Write one application.              | 3+1=4 |
| 19. What is an auto-transformer? Explain the working of auto-transformer.                 | 1+3=4 |
| 20. Explain the working principle of emergency light. Draw its block diagram.             | 2+2=4 |
| 21. Describe the working principles of single phase motors.                               | 4     |
| 22. Explain any four types of wires.                                                      | 4     |
| 23. Briefly explain the short circuit test of induction cooker or hot plate with diagram. | 2+2=4 |

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