

2020

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 is a part of electric iron which gives electric supply to heating element taken from the chord.
 - (a) Supply chord
 - (b) Terminal housing
 - (c) Asbestos sheet
 - (d) Pressure plate
 - ii. The voltage required for electric bell is
 - (a) 230v/240v
 - (b) 230v/230v
 - (c) 240v/250v
 - (d) 240v/260v
 - iii. Which of the following bulb consume the least power in lighting?
 - (a) Compact Fluorescent Lamp
 - (b) Fluorescent Tube
 - (c) Filament Lamps
 - (d) Light Emitting Diode
 - iv. Transformer works on which of the following supply?
 - (a) A.C.
 - (b) D.C.
 - (c) Both A.C. & D.C
 - (d) None of the above
 - v. What is needed for the smooth operation of electronic devices such as T.V., Computers, Radio etc.?
 - (a) Transformer
 - (b) Rectifier
 - (c) D.C. Supply
 - (d) A.C. Supply
 - vi. In batteries, what is converted into electrical energy through electrochemical reactions?
 - (a) Bio-chemical energy
 - (b) Mechanical energy
 - (c) Solar energy
 - (d) Chemical energy
 - vii. The measuring instrument of specific gravity of an electrolyte is called
 - (a) Ammeter
 - (b) Voltmeter
 - (c) Hydrometer
 - (d) Wattmeter
 - viii. In D.C. two wire system, the colour of the positive is
 - (a) Black
 - (b) Green
 - (c) Yellow
 - (d) Red
 - ix. Switches are always connected to
 - (a) Neutral wire
 - (b) Earthene
 - (c) Phase wire
 - (d) Negative wire

- x. The outer tube of the immersion water heater is made of
 - (a) Aluminium
 - (b) Copper
 - (c) Zinc
 - (d) Iron

Answer the following questions in one word or one sentence:

- 2. On which principle does the water heater work? 1
- 3. From which metal is Gong made of? 1
- 4. Mention any two parts of tube light. 1
- 5. What is the working principle of transformer? 1
- 6. What is Rectifier? 1
- 7. What is photovoltaic effect? 1
- 8. What is a battery? 1
- 9. What is earthing? 1

Answer the following questions in 20-50 words:

- 10. Mention any four areas where electric bell is used. 2
- 11. Write any four advantages of CFL. 2
- 12. Differentiate between electrical choke and electronic choke. 2
- 13. What is step down transformer? 2
- 14. Write any two precautions to be taken while testing and handling electric iron. 2
- 15. Mention any four basic parts of a regulated D.C. power supply. 2
- 16. Mention any two points on how to maintain a lead acid battery. 2
- 17. Draw the wiring diagram of two lamps controlled by two switches. 2

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

- 18. What is transformer? Explain briefly the constructional parts of transformer. 1+3=4
- 19. Describe the process of the installation of tube light set by using junction box. 4
- 20. Draw a circuit diagram of full wave rectifier and briefly explain its working. 2+2= 4
- 21. Name any two types of water heater. Explain the working principle of water heater. 1+3=4
- 22. Briefly explain any four types of insulated wires. 4
- 23. Draw the circuit diagram of simple emergency lamp. State any two precautions to be taken while handling emergency lamp. 2+2=4
