



C16-EE-105

5036

BOARD DIPLOMA EXAMINATION, (C-16)

MARCH / APRIL - 2019

DEEE - FIRST YEAR EXAMINATION

ELECTRICAL ENGINEERING MATERIALS

Time : 3 Hours]

[Total Marks : 80

PART - A

2×15=30

Instructions :

- (1) Answer any 15 questions.
- (2) Each question carries 2 marks.
- (3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1 Define the term Hardening.
- 2 List the applications of ACSR conductors.
- 3 List the properties of Carbon.
- 4 List the applications of Nichrome.
- 5 Classify the materials based on valence electrons.
- 6 Write any three differences between P-type and N-type Semiconductors.
- 7 List the factors effecting Insulation Resistance.
- 8 List the additives of P.V.C.
- 9 What is Permittivity ?
- 10 What is Dielectric loss ?

5036]

1

[Contd...

- 11 Define Magnetization.
- 12 Classify Magnetic materials.
- 13 Classify special purpose of materials.
- 14 List the Characteristics of a fuse material.
- 15 What is Galvanisation ?
- 16 List the advantages of Enamel Coated Copper wires.
- 17 Define : (a) Cell, (b) Battery.
- 18 Write the chemical reactions of Lead-Acid Battery.
- 19 What is trickle charging of batteries ?
- 20 List the applications of maintenance free batteries.

PART - B

10×5=50

Instructions :

- (1) Answer any **FIVE** questions.
- (2) Each question carries **TEN** marks.
- (3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 21 (a) Explain different properties considered for selection of conducting material. **5**
- (b) List the properties and applications of Copper. **5**
- 22 (a) Explain colour coding of Resistors. **6**
- (b) If a Resistor has colour bands of red, green, yellow and gold, determine the value of Resistance. **4**

- | | | |
|-----------|--|-----------|
| 23 | (a) Compare intrinsic and extrinsic semiconductor in any five aspects. | 5 |
| | (b) Explain formation of P-type semiconductor. | 5 |
| 24 | (a) Explain the electrical properties of insulating materials. | 5 |
| | (b) List the properties and applications of ceramic insulating material. | 5 |
| 25 | Draw and explain hysteresis loop. | 10 |
| 26 | (a) Write a short note on bi-metals. | 5 |
| | (b) Derive an equation for dielectric loss. | 5 |
| 27 | (a) List and explain the indication for a fully charged lead acid battery. | 5 |
| | (b) Write the comparisons between lead acid nickel iron cell. | 5 |
| 28 | Explain different types of charging methods of batteries. | 10 |