



C14-EE-105

4045

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2018

DEEE—FIRST YEAR EXAMINATION

ELECTRICAL ENGINEERING MATERIALS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is annealing ?
2. Compare copper and aluminium in any three aspects.
3. Write properties of extrinsic semiconducting materials.
4. Give any three properties of insulating materials.
5. List any three factors which affect the dielectric losses.
6. Define magnetostriction.
7. What is the principle on which bimetallic strip works?
8. List any three properties of fuse material.
9. Write the chemical reactions during charging and discharging of Nickel-Iron cells.
10. Define watt-hour efficiency of battery.

PART-B

10×5=50

- * **Instructions :** (1) Answer *any five* questions.
(2) Each questions carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** a) State the requirement of low resistivity materials.
b) State the properties and application of each of the following.
i) Tungsten, ii) Nichrome, iii) Manganin
- 12.** a) Explain colour coding of resistors with a neat diagram.
b) State the properties and applications of ACSR conductor.
- 13.** a) Distinguish between p-type and n-type semiconductors in any five aspects.
b) Classify semiconducting materials.
- 14.** a) Distinguish between conductors, semiconductors and insulators in any five aspects.
b) State any five properties of Sulphur hexafluoride and air.
- 15.** a) Explain the working of thermocouple with a neat diagram.
b) Explain about Polarization.
- 16.** Explain hysteresis loop curve with a neat diagram and state Steinmetz equation.
- 17.** a) Explain constant current method of charging a battery with a circuit.
b) Define capacity of a battery and state the factors which influence it.
- 18.** a) Give any five precautions to be taken when charging a battery.
b) Explain the construction and working of maintenance free battery.

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