



C14-EE-105

4045

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2016

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. List the properties of ACSR conductors.
2. Mention the applications of tungsten.
3. What is meant by doping in semiconductor?
4. Classify the insulating materials.
5. State the factors affecting dielectric loss.
6. State ferromagnetic materials with examples.
7. What is meant by galvanizing?
8. List the special purpose materials.
9. What are the indications of fully-charged lead-acid battery?
10. State the applications of lead-acid battery.

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PART—B

10×5=50

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

- 11.** (a) Explain the composition of constantan and write its properties and applications. 6
(b) State the requirements of high-resistive materials. 4
- 12.** (a) Explain the colour coding of the resistor. 4
(b) Define the terms (i) hardening, and (ii) annealing. 6
- 13.** (a) Explain the formation of P-type semiconductor. 5
(b) Distinguish between intrinsic and extrinsic semi-conductors. 5
- 14.** What are the properties and applications of sulphur hexa-fluoride gas and hydrogen? 10
- 15.** (a) Explain the colour coding of the capacitor. 5
(b) What is the function of a fuse? State the materials used for fuse wire. 5
- 16.** Explain the differences among paramagnetic, diamagnetic and ferromagnetic materials. 10
- 17.** Explain the two methods of charging of batteries. 10
- 18.** A battery is charged at 5 A for 4 hours at an average voltage of 13.8 V and discharged for 6 hours at 2.83 A at an average voltage of 12 V. Find (a) ampere-hour efficiency and (b) watt-hour efficiency. 10

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