

6039

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—2023

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. Define hardening and annealing.
2. State any six properties of mercury.
3. Distinguish between intrinsic and extrinsic semiconductors.
4. Define insulating materials and give example.
5. List any six insulating materials.
- * 6. Define dielectric loss.
7. What is meant by curie point?
8. Define fuse and write the fuse materials.
9. Define capacity of a battery and factors affecting it.
10. Mention the applications of nickel iron and nickel cadmium cells.

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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 criterion for valuation is the content but not the length of the answer.

- 11.** State the properties of conducting materials. 10
- 12.** Mention the properties of ACSR conductors and write its applications. 10
- 13.** (a) Distinguish between conductors, insulators and semi-conductors. 5
(b) Explain polarization with a neat sketch. 5
- 14.** State the electrical properties of insulating materials and factors affecting insulation resistance. 10
- 15.** Explain hysteresis loop with a neat sketch along with connection diagram. 10
- 16.** Explain the process of galvanizing and impregnation. 10
- 17.** Calculate the ampere-hour and watt-hour efficiencies of a battery, which is charged for 8 hours at 25 amps at an average voltage of 1.5 V and discharged at 20 A for 9 hours at an average voltage of 1.2 V. 10
- 18.** Describe the battery charging by (a) constant current method and (b) constant voltage method. 10

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