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C16–EE–105

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DEEE—FIRST SEMESTER EXAMINATION

ELECTRICAL ENGINEERING MATERIALS—I

Time : 3 hours] [*Total Marks* : 80

PART—A 2×15=30

Instructions : (1) Answer *any* **fifteen** questions.

(2) Each question carries **two** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define conducting materials.

2. Define the following terms :

(a) Hardening

(b) Annealing

3. State the main requirements of low resistivity material.

4. List the types of high resistivity materials.

5. Write the applications of ACSR and AAAC conductor.

6. Draw energy level diagram of conductor and insualtor.

7. List the application of PVC.

8. Write the factors affecting insulating resistance.

9. Classify the insulating materials.

10. Define dielectric strength and write its units.

11. What is dielectric material? Give examples.

12. Define permittivity and mention its types.s

13. State the application of dielectrics in capacitor.

14. Classify the magnetic materials with examples.

15. Write Steinmetz equation.

16. Define magnetostriction.

17. What is meant by Curie point?

18. List different materials used for fuses.

19. What is meant by galvanizing?

20. Define impregnation.

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.

21. State the properties and applications of copper and aluminium in any five aspects.

22. Explain about colour coding of resistors as per BIS with example.

23. State the properties and applications of Sulphur Hexafluoride (SF_6) and hydrogen.

24. State the properties and applications of *(a)* mica and *(b)* glass.

25. Define dielectric loss and explain it.

26. *(a)* Write a short note on permittivity. 5

(b) Explain BH curve with a neat sketche. 5

27. Explain the difference among paramagnetic, diamagnetic and ferromagnetic materials.

28. *(a)* Explain the principle of thermocouple with a neat sketch. 5

(b) Write the applications of enamel-coated copper wire. 5

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