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5036

BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER/NOVEMBER-2018
DEEE-FIRST YEAR EXAMINATION

ELECTRICAL ENGINEERING MATERIALS

Time : 3 Hours]   [Total Marks: 80

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PART-A

2x15=30

Instructions   :   1. Answer **any Fifteen** questions.

2. Each question carries **Two**.

3. Answer should be brief and straight to the point and shall not exceed

five simple sentences.

1.   What are high resistive materials? Give examples.

2.   Mention any four properties of Eureka.

3.   Define hardening and annealing.

4.   Give the applications of tungsten.

5.   Write at least four differences between intrinsic and extrinsic semiconductors.

6.   Define Fermi-level.

7.   What are the various factors on which insulation resistance depends?

8.   Mention the properties of asbestos.

9.   Define relative permittivity and give its units.

10. Define polarization.

11. Define magnetostriction.

12. Define magnetic flux density and give its units.

13. Define fuse.

14. State the need of protective materials.

15. What is ment by soldering, write the materials used for it.

16. Define impregnation.

17. Define trickle charging.

18. State the applications of Nickel-iron cells.

19. State the factors affecting capacity of a battery.

20. Define maintenance free battery.

PART-B

10X5=50

Instructions :   1. Answer any **Five** questions.

2. Each question carries **ten** marks.

3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

21. (a) Define conducting material and state its properties.

(b) Compare copper and aluminium in six aspects

22. Write the properties and applications of ACSR and AAAC.

23. (a) Classify semiconductor materials.

(b) Explain the formation of P-type semiconductor with diagram.

24. What are the properties and applications of PVC?

25. (a) List the factors that affect the dielectirc strength of an insulating material.

(b) Explain in detail about galvanisation.

26. (a) What is hysteresis looop? Explain.

(b) Explain soft and hard magnetic materials with examples.

27. (a) Calculate the efficiencies for an accumulator which is charged in 8 hours by 30A at an average potential difference of 2.2V and is discharged in 9 hours by 24A at an average potential difference of 1.9V.

(b) Write about the indications of fully charged lead acid battery.

28. Explain the construction and working principle of lead acid cell.

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