4045

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DEEE - FIRST YEAR EXAMINATION

ELECTRICAL ENGINEERING MATERIALS

Time: 3 Hours   Max. Marks:80
PART-A
10x3=30M

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

1) Enumerate the properties of low resistivity materials.

2) Define Conducting materials

3) Classify the materials based on valence electrons.

4) What is the difference between an Insulator and Dielectric?

5) List any four applications of Di-electric

6) What do you understand by eddy current loss?

7) What are the characteristics of fuse element material ?

8) What are the advantages of Impregnation ?

9) What is trickle charging ?

10) What are the factors affecting the capacity of batteries?

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5X10=50M

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

11) a) Explain the effect of annealing and hardening of Copper on its electrical and mechanical properties.

   b) State the properties and applications of manganin and constantan.

12) a) Distinguish between copper and aluminum in any five aspects.

   b) State the properties of ACSR conductors.

13) a) Explain the formation of P-type semiconductors with neat sketch.

   b) Distinguish between P-Type and N-type Semiconductors in any five aspects.

14) a) Briefly explain about the materials added to PVC to improve its properties.

   b) State the properties and applications of Sulphar hexa Fluoride (SF_6)

15) a) Deduce the expression for Dielectric loss.

   b) Write the advantages and applications of Enamel Coated Copper wires.

16) a) Plot Hysteresis loop and identify salient points on it.

*   b) Compare Soft and Hard magnetic materials.

17) a) Compare between Lead acid cell and Nickel Iron cell.

   b) Explain Charging of battery by constant voltage method with a neat sketch.

18) a) Distinguish between maintenance free battery and lead acid battery in any five aspects.

   b) Determine the ampere-hour and watt-hour efficiencies of a batery which is charged for 12 hours at 25A at an average voltage of 2.5V and is discharged in 10 hours at a load of 20A at an average voltage of 2.25V.

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