4045

BOARD DIPLOMA EXAMINATION, (C-14)
JUNE-2019
DEEE - FIRST YEAR EXAMINATION

ELECTRICAL ENGINEERING MATERIALS

Time:3hrs   Max.Marks:80

PART-A

3x10=30M

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

1) What is hardening?

2) Define Conducting materials

3) What is intrinsic semiconducting material?

4) Give any three applications of impregnated paper.

5) Define permittivity? Write the relative permittivity of air   1½+1½

6) State curie point

7) Why do you use a fuse in a circuit?

8) State the need for protective materials.

9) Write the chemical reactions during charging and discharging of Nickel-ion cell.   1½+1½

10) List the indication of fully charged lead acid battery.

1   *[Contd...]*

Instructions: 1) Answer any **five** questions and each question carries **ten** marks.

2) The answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) (a) State any five requirements of high resistive materials.   5M

(b) Expalin about ACSR conductor with a neat sketch.   5M

12) (a) Explain color coding of resistors with a neat diagram.   5M

(b) List the properties and applications of Nichrome and carbon.   5M

13) (a) Explain the formation of P-type and N-type material with a neat diagram   5M

(b) Distingush between P-type and N-type semiconductors in any five aspects   5M

14) (a) Explain thermoplastic and thermosetting resins with examples. 5M

(b) State any five properties of Air and Hydrogen.   5M

15) (a) Explain dielectric loss and give its formula   4M

(b) Explain the process of   6M

(i) Galvanzing   (ii)Impregnation

16) Explain hysteresis curve with a neat diagram and state Steinmetz equation.

17) (a) List the parts of lead acid battery.   4M

(b) A lead acid cell is discharged of a steady current of 8 A for 9 hours with an average terminal voltage of 2.0 V. It is charged at a charging current of 4 A for 18hours with an average terminal voltage of 2.2 V. Calculate the A-H and W-H effiency of the battery   6M

18) (a) Give any five applications of a battery   5M

(b) Explain charging of batteries by constant voltage method.   5M

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