Roll No. | | | | | | | | | | | | | Total No. of Pages :02

Total No. of Questions :18

B.Tech. (Electrical & Electronics)/(Electrical Engineering)/
(Electronics & Electrical)(Sem.–5)

ELECTRICAL ENGINEERING MATERIALS

Subject Code :BTEE-504A-18

M.Code :78703

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Answer briefly :

1) What do you understand by permeability?

2) What is meant by hysteresis loss?

3) What are N-type semiconductors? Give examples.

4) What are bimetals? Give examples.

5) What are paramagnetic materials? Also give examples of paramagnetic materials.

6) Mention the characteristics of a good insulating material.

7) Explain the Seeback effect.

8) What do you mean by Ferroelectricity?

9) What is Resistance? On what factors does it depend?

10) Explain Hall effect.

SECTION-B

11) What do you mean by a thermo-couple? Explain the construction and working of a thermo-couple.

12) State and explain main factors which decide selection of an insulating material for a particular purpose.

13) How can the materials be classified on the basis of energy bands? Discuss.

14) Explain the term electrical conductivity. Also discuss effect of temperature on electrical conductivity of metals.

15) Explain Curie point and Retentivity of magnetic materials.

SECTION-C

16) Write a note on following:

   a. Photo electric emission

   b. Polarization

17) What do you mean by Dielectrics? Discuss the effect of a dielectric on the behavior of a capacitor. Explain the term dielectric constant and also discuss about the dielectric constant of monatomic gases. Name any two dielectric materials used in electrical machines.

18) Write a note on following:

   a) Classical theory of electrical and thermal conduction in solids.

   b) Electrical conductivity of doped materials.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.