

Code: EE1T5 / EE2T6RS

**I B.Tech - I Semester – Regular / Supplementary Examinations  
November 2017**

**ELECTRICAL ENGINEERING MATERIALS  
(ELECTRICAL AND ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) Explain atom.
- b) What are the electrical properties of materials?
- c) Define diode and give its V-I Characteristics.
- d) Explain P-Type and N-type materials.
- e) Explain Ferro electric materials.
- f) What is mean by polarization?
- g) Explain characteristics of good electrical insulating materials.
- h) List the classification based on dielectric strength.
- i) What are the Ferro magnetic materials?
- j) Define hysteresis loss and write formula.
- k) Give applications of piezo electric materials.

## PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

- 2.a) Explain factors effecting of the resistivity of electrical materials. 8 M
- b) Discuss about electron configuration of atom. 8 M
- 3.a) Write short notes on Intrinsic and extrinsic semi conductors. 8 M
- b) Explain properties of high resistivity materials. 8 M
- 4.a) What is polarization? Explain electric and ionic polarization. 8 M
- b) Explain piezo electric materials and give application. 8 M
- 5.a) List the different types of liquid insulating materials and give the applications. 8 M
- b) Explain electrical and mechanical properties of micanite and PVC . 8 M

6.a) Explain properties of magnetically soft materials. 8 M

b) Briefly discuss about hard soldering and soft soldering. 8 M