PVP 14

Code: EE1T5 / EE2T6RS

I B.Tech - I Semester – Regular Examinations – November 2015

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) What are the properties of ideal insulating materials?
   b) On what factors the resistivity of a material depend?
   c) Write the uses of a transistor.
   d) What are the liquid insulating materials?
   e) Distinguish between hard soldering and soft soldering.
   f) Write a note on Iron- silicon Alloy.
   g) Write the application of Piezo electric materials.
   h) What is meant by dielectric constant and how it is measured?
   i) What are the properties of resins?
   j) List out the differences of intrinsic and extrinsic semiconductors.
   k) Define dielectric loss and write the express for loss angle.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Write the electrical and mechanical properties of conducting materials in detail. 8 M

b) Explain the Electrical and mechanical properties of steel, tin and their alloys. 8 M

3. a) Distinguish between the P-type and N-type crystals. 8 M

b) Write a brief note on electrical and mechanical properties of Manganin and Tungston. 8 M

4. a) Define and explain the different kinds of polarization mechanisms. 8 M

b) Write a short note on the temperature and frequency dependence on dielectric constant of polar dielectrics. 8 M

5. a) Write a short note on Thermal and mechanical properties of solid insulating materials. 8 M

b) Explain the Thermal and Mechanical properties of Bakelite, Resin and PVC. 8 M

6. a) Briefly discuss the phenomenon of magnetic hysteresis and why it occurs for ferromagnetic and ferrimagnetic materials. 8 M

b) Write the differences between the soft and hard magnetic materials interms of hysteresis behavior and typical applications. 8 M