PVP 14

Code: EE1T5

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

ELECTRICAL ENGINEERING MATERIALS
(ELECTRICAL & 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) Compare metals and non-metals.
   b) What are the applications of aluminium?
   c) What are P-type and N-type semiconductors?
   d) What is the material used for filaments in candescent bulbs? Give reasons.
   e) Define electric permittivity.
   f) What is the effect of frequency on dielectric constant?
   g) Give any three examples of insulating liquids.
   h) What is the effect of moisture on insulation strength?
   i) Write short notes on hysteresis loss.
   j) State the advantages of silicon steel.
   k) Give compositions of any three alloys and state their applications.

PART – B

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

2. a) What are the factors affecting the resistivity of electrical conducting material? 8 M

   b) What are the desired properties of conducting material? 8 M

3. a) Explain the atomic structure of silicon and germanium. 8 M

   b) What are high resistivity conducting materials? What are their applications? 8 M

4. a) Explain the concept of polarization. 8 M

   b) Compare the properties of solid, liquid and gas dielectric materials. 8 M

5. a) What are the properties of ideal insulation materials? 8 M

   b) Explain the classification of insulation materials based on their properties. 8 M

6. a) What are soldering materials? Explain the classification of soldering materials. 8 M

b) Write short notes on hysteresis loop. What is its significance? 8 M