Roll No .....

EX - 402

B.E. IV Semester

Examination, December 2012

Electrical & Electronics Materials

Time : 3 Hours

Maximum Marks : 70/100

Note : 1. Attempt any *one* question from each unit.

UNIT - I

1. a) Mention commonly used good conducting materials and explain the characteristics and properties of resistor materials.
   b) Describe the theory of super conductivity and mention its applications.

Or

2. a) Explain the properties and uses of following conducting materials
   (i) Tin (ii) Silver (iii) Molybdenum
   b) Discuss the requirements of materials used for bus-bar and MHD generator.

UNIT-II

3. a) State the factors affecting the dielectric strength and dielectric loss.
   b) Explain molecular theory of polarization.
   c) Describe conduction in gaseous dielectrics

Or

4. a) Mention the classification of insulating material according to the temperature with stability of material and give few examples for each grade of insulation.

b) What are the factors that affect the insulation of transformer oil?

UNIT - III

5. a) Explain the function and applications of temperature sensitive element.

   b) Describe the working and application of semiconductors.

Or

6. Write a brief note on any three:

   a) Photo diode b) Light emitting diode

   c) Variastor d) Hall effect generator

UNIT - IV

7. a) Explain the classification of magnetic materials used in industry and give the name of materials respectively.

   b) Describe Soft Magnetic and Hard Magnetic materials using B.H. curve and give their applications.

Or

8. a) What are the impurities in Ferro-magnetic material and discuss the factors responsible for loss magnetism.

   b) Describe following special purpose magnetic materials characteristics:

   (i) Fluorescent and phosphorescent

   (ii) Thermo couple

UNIT - V

9. a) Explain the basic steps for fabrication of electronic components on monolithic IC.

   b) What is IC packaging. Describe most popular types of IC package with neat sketches.

Or

10. Write short notes on fabrication of:

    a) BJT b) Resistor and Capacitor

******