

EX-402(O)

B. E. (Fourth Semester) EXAMINATION, Dec, 2009  
(Old Scheme) (Electrical & Electronics Engg. Branch)

ELECTRICAL AND ELECTRONICS MATERIALS [EX—402(O)]

Time : Three Hours Maximum Marks : 100 Minimum Pass Marks : 35

Note : Attempt any five questions. Assume suitable missing data if any.

1. (a) What are the various classes of materials ? Explain. 8  
(b) Give classification of conductors and characteristics of good conductors. What do you understand by superconductivity and thermal conductivity ? 12
2. (a) What are the properties of dielectric materials ? Explain. 10  
(b) Give classification of insulators. Also give their properties. 10
3. (a) What is the difference between conductors and semiconductors ? Explain. What are the various types of semiconductors ? How are they formed ? Explain.  
(b) Give working principle of photoconductive cell and photovoltaic cell. 10
4. a) Classify magnetic materials with specific characteristic of each. 10  
b) What is B-H curve ? Explain. Give B-H curves for different types of magnetic materials. 10
5. a) Explain the fabrication process of BJT. 10  
b) What are the advantages of IC's ? 5  
c) Give various types of IC packagings. 5
6. (a) What are piezo-electricity and ferro-electricity ? Explain. 10  
b) What is the Hall effect ? Explain. 10
7. (a) What is hysteresis loop ? Explain P in detail. 10  
b) Explain the working principle of a light dependent in register. 10
8. Write short notes on any three of the following : 20
  - i) Thermionic conductors
  - ii) Transformer oils and their testing
  - iii) Photo diode
  - iv) Fluorescent and phosphorescent y) Monolithic diodes
  - vi) Types of capacitors
  - vii) Ferrites