

01915

**DIPLOMA IN ELECTRICAL ENGINEERING
(DELVI)**

Term-End Examination

June, 2012

**OIEE-002 : ELECTRICAL ENGINEERING
MATERIAL**

Time : 2 hours

Maximum Marks : 70

Note : *Answer in English only.*

- (i) *Question No. 1 is compulsory.*
 - (ii) *Attempt any four out of seven questions.*
 - (iii) *All questions carry equal marks.*
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1. (a) Electronic polarization : **2x7=14**
- (i) Decrease with temperature.
 - (ii) Increase with temperature.
 - (iii) May increase or decrease with temperature.
 - (iv) Is independent of temperature.
- (b) Carbon is a conductor. (True / False)
- (c) The unit of magnetomotive force is _____ .
- (d) Simple cubic has packing density _____ .
- (e) Hydrogen bonds are stronger than _____ .

- (f) For perfect diamagnetic material $B=0$.
(True/ False)
- (g) Reluctance is reciprocal of permeance.
(True / False)
2. (a) What are various properties of electrical engg. materials ? 7
- (b) Explain term : Relaxation time, collision time, mean free path of metals. 7
3. (a) Differentiate Conductor, Semiconductor and Insulator ? 7
- (b) Explain energy bonds in Electrical Engineering material ? 7
4. (a) Explain Frochlich's theory in respect to Dielectric material. 7
- (b) Explain dielectric properties in static field. 7
5. (a) Explain relaxation time, collision time; mean free path in conductive material. 7
- (b) Explain dielectric break down in gases. 7
6. (a) Why does the superconductivity not changes with the impurity content. 7
- (b) Explain passive element and active elements in detail. 7

7. (a) Explain classification of magnetic material. 7
(b) What is magnetostriction and factor affective permeability. 7
8. Write in short *any four* : 3.5x4=14
- (a) difference between antiferromagnetic material and ferrimagnetic materials.
 - (b) Origin of permanent magnetic dipole.
 - (c) Dielectric break down in gases.
 - (d) Liquid insulating material
 - (e) Magnetic material classification
 - (f) Magnetic resonance.
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