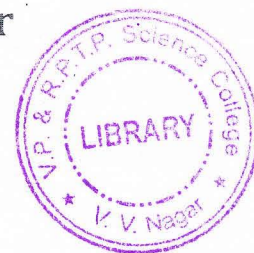


VP & RPTP Science College-Vallabh Vidyanagar

Internal Test: 2014

S Y BSc [Semester-IV]

Subject-Physics US04CPHY02



Date: 11/03/2014 Tuesday

Time: 1.00 pm to 2.30 pm

Total Marks-30

Q-1 Answer the following questions in short [Attempt any three]. 6

- (a) Define Primitive and Non-primitive unit cell.
- (b) Draw all triad axes of a cube.
- (c) Give common features of materials having metallic bond.
- (d) Why magnetic and gravitational forces are neglected in cohesion?
- (e) Define molecular weight for polymers.
- (f) Differentiate thermoplastic and thermosetting polymers.

Q-2 What are the lattice parameters of a unit cell? Discuss seven crystal systems based on lattice parameters, in detail. 8

OR

Q-2 Define atomic radius and atomic packing factor (APF). Calculate APF for HCP structure. 8

Q-3 Calculate the lattice energy of ionic crystals. Give value of cohesive energy per molecule of NaCl. 8

OR

Q-3 Derive the Madelung constant of ionic crystals. Give value of Madelung constant for NaCl and CsCl structure. 8

Q-4 (a) Give classification of polymers based on molecular characteristics. 4
(b) Discuss molecular structures in detail. 4

OR

Q-4 (a) Discuss isomerism in detail. 4
(b) Discuss characteristics of plastic and elastomers. 4