ET-204(A)

B.Tech. Civil (Construction Management)
Term-End Examination
June, 2014

00765

ET-204(A) : MATERIALS SCIENCE

Time : 3 hours   *Maximum Marks : 70*

Note : *Answer any **seven** questions. Use of scientific calculators is allowed.*

1. (a) Distinguish between Amorphous and Crystalline solids.   5

    (b) What are the characteristics of polymers ?   5

2. (a) What do you understand by degenerate levels ? Explain.   5

    (b) Distinguish between conductor, semi-conductor and insulator.   5

3. Calculate the packing fraction of   5+5

    (a) BCC structures

    (b) FCC structures.

4. Explain the following :   5+5

    (a) Eutectic system

    (b) Peritectic system

5. With the help of neat sketches, explain the Edge dislocation and Screw dislocation defects occurring in solids. *5+5*

6. (a) Define the term Plasticity and explain the plastic deformation. *5*

    (b) What is meant by viscous deformation ? Explain. *5*

7. (a) Distinguish between intrinsic and extrinsic semi-conductors. *5*

    (b) Write a note on "Drift velocity". *5*

8. With the help of a neat diagram, explain the experimental set-up and procedure of tensile test. *10*

9. Write notes on : *5+5*

    (a) Griffith theory

    (b) TTT diagrams

10. (a) Discuss the effect of mechanical stresses on corrosion. *5*

    (b) Discuss the kinetic aspects of corrosion. *5*