

Register Number:

Name of the Candidate:

B.Sc. DEGREE EXAMINATION December 2014

(CONSTRUCTION MANAGEMENT)

(FIRST SEMESTER)

140: APPLIED CHEMISTRY

Time: Three hours

Maximum: 75 marks

Answer ONE FULL question from each UNIT

(5 × 15 = 75)

UNIT-I

1. a) A sample of water contains the following dissolved salts in mg/lit (8)
 $\text{Mg}(\text{HCO}_3)_2=73$; $\text{CaCl}_2=111$ $\text{Ca}(\text{HCO}_3)_2=81$ and $\text{MgSO}_4=40$. Calculate the temporary and Permanent hardness of the water.
- b) How is internal treatment of boiler water carried out using phosphate (7)
and calgon?

(OR)

2. a) Describe the process of demineralisation of water using ion exchange (8)
resins.
- b) What are the various methods by which disinfection of domestic water (7)
is carried out? Explain.

UNIT-II

3. a) What is meant by electrochemical corrosion? Explain its mechanism. (8)
- b) Give an account of Tinning and Galvanising. (7)

(OR)

4. a) Explain sacrificial anodic protection method of controlling corrosion. (8)
- b) Explain any three methods of preparing the surface of metallic coating. (7)

UNIT-III

5. a) Distinguish between thermoplastics and thermosetting resins. (7)
- b) Give the preparation, properties and uses of the following (i) Polyvinyl (8)
chloride (ii) Bakelite.

- (OR)
6. a) Explain vulcanization of rubber. (7)
b) Explain the injection moulding process with a neat diagram. (8)

UNIT-IV

7. a) Discuss four essential properties of good refractory material. (8)
b) Give an account of the materials used in making insulators. (7)

(OR)

8. a) What are electrical insulators? Write their characteristics and engineering applications. (8)
b) Give the preparation, properties and uses of zirconia bricks. (7)

UNIT-V

9. a) Explain (i) Flash and fire point. (ii) Cloud and pour point (8)
b) Explain the mechanism of lubrication. (7)

(OR)

10. a) How will you manufacture Portland cement by wet process? (8)
b) Explain the setting and hardening of Portland cement with chemical reaction involved in it. (7)
