

Code :RR100304

B.Tech I Year(RR) Supplementary Examinations, May 2011
ENGINEERING CHEMISTRY
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) What is meant by cathodic and anodic inhibitors?
(b) What are the requirements of a paint?
(c) Describe the phosphate coatings.
2. (a) What is a homochain polymer? Give examples.
(b) What is polymerization? Explain the different types of polymerization with examples.
3. (a) Discuss the important methods used for the prevention of scale formation in industrial boilers.
(b) What is caustic embrittlement and how it can be avoided?
4. Calculate the amount of soda and lime required to soften 15,000 lit of water which showed the following analysis.
NaCl= 15.5 ppm, KCl = 25 ppm, CO₂ = 5.5 ppm, Mg SO₄ = 120 ppm, CaCl₂ = 22ppm, Ca(HCO₃)₂ = 15ppm, Mg (HCO₃)₂ = 3.30 ppm, Suspended matter =15 ppm, Organic impurities = 35 ppm.
5. (a) Give the classification of fuels with suitable examples.
(b) What is metallurgical coke? Describe any one method of manufacturing metallurgical coke.
6. (a) What is combustion? What is the importance of moisture in coal in combustion?
(b) Calculate the weight and volume of air needed for the combustion of 1 kg of carbon. Give the composition of the combustion products.
(c) How do you prepare synthetic petrol by polymerization?
7. (a) What do you understand by 'Refractoriness'. Explain its measurement.
(b) Write a short note on 'refractoriness-under-load' (RUL).
8. (a) Define flash and fire points.
(b) Discuss the important functions of lubricants.
