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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APR / MAY 2014

COMMON TO B.E CIVIL AND AGRICULTURAL ENGINEERING PROGRAMMES

Second Semester

CY 8251 – CHEMISTRY FOR CIVIL AND AGRICULTURAL ENGINEERING

(Regulation 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What is lime? Give any two of its uses.
2. Write a brief note on safety glass.
3. Define pitting corrosion.
4. What is electroless plating? Give any two advantages of it over electroplating.
5. Define the term 'specific adhesion'.
6. List any four physical factors influencing adhesive action.
7. What is an abrasive paper or cloth? Why are they used?
8. What is meant by RUL test?
9. What are the various sources of water?
10. Define the term 'disinfection'. Give an example of disinfectant.

Part – B (5 x 16 = 80 marks)

11. (i) Describe with a neat diagram 'ion exchange method' of treating hard water. (8)
 - (ii) What is desalination of water? Explain reverse osmosis method with a neat diagram. (8)
 12. a) (i) What is glass? Discuss in detail the steps involved in the manufacture of glass. (8)
 - (ii) Explain setting and hardening of cement with appropriate equations. (8)
- (OR)**
- b) (i) Write short notes on stoneware products. (4)
 - (ii) What is concrete? List any four factors that can lead to decay of concrete. (4)
 - (iii) Explain the manufacture of lime with a neat diagram. (8)

13. a) (i) Explain the mechanism of wet or electrochemical corrosion during absorption of oxygen. (8)
(ii) Describe electrochemical protection of metals by impressed current cathodic protection method. (8)

(OR)

- b) (i) Write short notes on caustic embrittlement. How is it prevented? (8)
(ii) What is paint? Describe the various constituents present in paint. (8)

14. a) (i) Discuss in detail the various chemical factors influencing adhesive action. (8)
(ii) What are composites? What are its constituents? Give any five applications of composite materials. (8)

(OR)

- b) (i) Write short notes on fiber reinforced composites. (8)
(ii) Describe the various factors that lead to the development of adhesive bond strength. (8)

15. a) (i) Write short notes on the steps involved in the manufacture of refractories. (8)
(ii) Discuss the preparation, properties and uses of silicon carbide neutral refractories. (8)

(OR)

- b) (i) Discuss the preparation, properties and uses of silica brick refractories. (8)
(ii) Explain in detail the terms, 'refractoriness' and 'dimensional stability' in a refractory material. (8)
