L 1066

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Second Semester

Chemical Engineering

CY 1154 — CHEMISTRY — II

(Common to Polymer Technology and Textile Technology (Fashion Technology))

(Regulations 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Why is geometry of NH_3 pyramidal?

2. Why is the bond energy of N_2 higher than that of O_2?

3. What is natural rubber?

4. Plasticiser is used during moulding of plastics. Give reason.

5. What is meant by rusting of Iron?

6. Wire mesh corrodes faster at the joints. Why?

7. What is meant by degree of hardness of water?

8. Why is boiled water not always 100% safe for drinking purposes?

9. What is synthetic petrol?

10. In a catalytic cracking process, catalyst requires regeneration. Give reason.

PART B — ($5 \times 16 = 80$ marks)

11. (i) Give the properties of covalent compounds. (6)

(ii) Explain the consequences of Hydrogen bonding. (5)

(iii) Give the salient features of band theory. (5)

12. (a) (i) Write short note on thermocole. (6)

(ii) Distinguish between polymerization by addition and condensation processes. (5)

(iii) Define and give examples for

(1) Monomer

(2) Functionality. (5)

Or

(b) (i) What is laminated plastics? Give its properties and uses. (6)

(ii) Give any five application of rubber. (5)

(iii) How will you prepare

(1) Nylon 6 : 6

(2) Nylon – 6. (5)

13. (a) (i) What is meant by differential aeration corrosion? Illustrate with suitable example. (6)

(ii) Discuss any five methods of corrosion control. (5)

(iii) What is a sacrificial anode? How does it protect a submerged pipeline? (5)

Or

(b) (i) What are the constituents of varnishes? Discuss their functions. (6)

(ii) Explain the methods used for preparing a metal surface for deposition. (5)

(iii) State the characteristics of a good paint. (5)

14. (a) (i) Give an account of purification of water for town supply. (6)

(ii) Discuss the various disadvantages caused by scale formation. (5)

(iii) Discuss phosphate conditioning. (5)

Or

(b) (i) Name the different methods of desalination. Explain one in detail. (6)

(ii) What are the merits and demerits of ion exchange resins? (5)

(iii) What is meant by a Break point chlorination? Explain. (5)

15. (a) (i) Give a detailed account of petroleum refining. (10)

(ii) Describe the importance of ultimate analysis of coal. (6)

Or

(b) (i) What are the characteristics of metallurgical coke. (6)

(ii) Write note on source, composition and uses of natural gas. (5)

(iii) Discuss manufacture, composition and uses of producer gas. (5)
