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B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2003.

Second Semester

Chemical Engineering

CH 131 — CHEMISTRY — II

(Common to Textile Tech., Leather Tech., and Polymer Technology)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define soil pollution.

2. How does automobile exhaust contribute to air pollution?

3. Give the composition of coal gas.

4. Why is coke preferred in metallurgical operations?

5. What are the raw materials used for the manufacture of cement?

6. Write the limitations of adhesive bonding.

7. Mention any four applications of polyacetals.

8. Define composite materials with a suitable example.

9. What are greases? How are they prepared?

10. How is chlorine dioxide prepared?

PART B — (5 × 16 = 80 marks)

11. (i) What are the causes and effects of acid rain? Explain the trickling filter treatment method. (8)

(ii) Define BOD and COD. How will you determine COD? (8)

12. (a) (i) How are benzene and phenol obtained by coal–tar distillation? (8)

(ii) Explain the catalytic reforming process with the type of reactions involved. (8)

Or

(b) (i) Describe the manufacture of producer gas. (8)

(ii) How will you determine the calorific value of a solid fuel by bomb calorimeter method? (8)

13. (a) (i) Give an account of various types of lime indicating their properties and uses. (8)

(ii) Describe the properties that make epoxides as adhesives. What are the chemical factors that influence adhesive action? (8)

Or

(b) (i) Explain the chemistry involved in setting and hardening of cement. (8)

(ii) What are the different types of adhesives? Give examples? Write a note on polyurethanes. (8)

14. (a) Give the method of preparation, properties and uses of (i) Nylon 6, 6 (ii) Polyester (iii) Polycarbonate (iv) Poly tetrafluoro ethylene. (16)

Or

(b) (i) What are reinforced plastics? Give the functions of fillers. Explain with examples. (10)

(ii) Outline the applications of reinforced plastics. (6)

15. (a) (i) How are silicon carbide bricks prepared? Give its important properties and uses. (8)

(ii) Write a note on any four pigments. (8)

Or

(b) (i) What are solid lubricants? When are they used? Explain the structure of any one solid lubricant. (8)

(ii) Describe the bleaching action of a reducing agent and oxidising bleaching agent. (8)

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