

Name.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL/MAY 2005

Branches : Industrial Chemistry

Vocational Subject – Industrial Chemistry

Paper IV—INDUSTRIAL CHEMISTRY

Time : Three Hours

Maximum : 130 Marks

Section A

*Answer any ten questions.
Each question carries 4 marks.*

1. What is calibration ? State the methods for calibrating the measuring instrument.
2. What are the different devices to measure the density of liquids ?
3. What is the role of plants in controlling air pollution ?
4. What is permanent hardness ? Is it possible to remove permanent hardness by adding lime ?
5. What do you mean by aerobic oxidation ?
6. What is the purpose of chlorination of water ?
7. ~~What is meant by reverse osmosis method for desalting sea water ?~~
8. Define COD and BOD.
9. What is classical smog and photochemical smog ?
10. What do you mean by biosphere ?
11. What is a bag filter ?
12. What is plate column scrubber ?
13. Write a note on ozone hole.
14. What are manometers and barometers ? Differentiate.
15. Name two chemical industries that gives large amounts of solid waste.

(10 × 4 = 40 marks)

Section B

*Answer any five questions.
Each question carries 10 marks.*

16. What are the advantages of radiation temperature measuring methods over other methods.
17. Explain the industrial RTD construction requirements.
18. What is green house effect ? How is it caused ? What are the adverse effects of green house effect ?
19. What is thermal pollution ? What are the different sources ? How thermal pollution can be controlled ?
20. What is the purpose of sterilizing water ? What are the different chemicals used for this purpose ? Compare their relative merits.

Turn over

21. Discuss the nitrogen cycle in nature.
22. Describe the various safety measures in Chemical Industry.
23. Explain the working of a limetallic thermometer with the help of a diagram.

(5 × 10 = 50 marks)

Section C

Answer any two questions.

Each question carries 20 marks.

24. (a) How will you differentiate between direct and indirect level measuring methods? List various direct and indirect methods.
(b) How will you measure absolute pressure and gauge pressure with the help of a liquid manometer.
(12 + 8 = 20 marks)
25. (a) What are the various sources of air pollution? Discuss some of their effects.
(b) Write explanatory note on merits and demerits of chloro fluorocarbons.
(12 + 8 = 20 marks)
26. (a) What is the purpose of sewage treatment? What are the difficulties encountered in the sewage treatment?
(b) Write a brief note on activated sludge process.
(12 + 8 = 20 marks)
27. (a) What are the sources of contamination of ground water? Discuss the harmful effects of ground water pollution. Suggest steps for protection of ground water.
(b) Briefly explain the treatment of water for municipal purpose.
(14 + 6 = 20 marks)
(2 × 20 = 40 marks)