Chemical Engineering

INTRODUCTION TO CHEMICAL ENGINEERING

1. List any six major Refineries in world.
2. Give three terms of expressing compositions of an ore.
3. Give an example for the industrial use of ‘evaporation’.
4. Define the order of reaction and molecularity of a chemical reaction.
5. What is the information available in a typical block diagram?
6. Give the principle of temperature measurement using a thermocouple.
7. Give three chemical characteristics of wastewater.
8. List any three novel materials and their applications.
9. Explain briefly the history of Chemical Engineering.
10. Specific heat of water is 1 cal/gm oC. Express it in the unit Btu/lb oF.
11. Explain the basic principle of distillation.
12. Explain an examplefor extraction operation useful in any typical chemical industry.
13. Differentiate between Mixed flow reactor and Plug flow reactor.
14. Write short note on shell and heat exchangers.
15. Explain the principle of flow measurement using Venturimeter.
16. Explain the basic concepts of P&IDiagrams.
17. Explain a typical wastewater treatment facility of a chemical plant.
18. Explain the importance of Safety in chemical process industries.
19. Explain briefly the profession of Chemical plant operation.
20. A solution of potassium chloride in water contains 410g KCl per litre of the solution at 300K. The density of the solution is 1.6 g/cm. Determine the concentration in the mole fraction of KCl, the molarity of the solution and the molality of the solution.
21. C6H5-CH3 (Toluene) and CH3OH (Methanol) reacts to form C6H5-CH=CH2 (6) (Styrene), Water and Hydrogen. Find the amount (weight) of raw materials needed to manufacture 100 Tonnes of Styrene/day.
22. Explain the unit process of Saponification.
23. 400 moles of A is fed to a reactor. The reaction scheme is given by A^ R, A^ P. Find the conversion of A and yield of P if 100 moles of R and 210 moles of P are formed.

24. Explain the various flow patterns such as laminar flow and turbulent flow.
25. Explain the elements of a typical feedback control loop.
26. Explain the incident of “Bhopal Disaster”.