

2125
B.A./B.Sc. (General) Fifth Semester
Industrial Chemistry
Paper - A

Time allowed: 3 Hours

Max. Marks: 75

NOTE: Attempt five questions in all, including Question No. 1 (Unit-I) which is compulsory and selecting one question each from Unit II - V.

x-x-x

UNIT-I

1. a) How does project size and location influence cost estimation? (4)
- b) How does scientific management improve industrial productivity? (4)
- c) Explain the procedure for sampling bulk materials. (4)
- d) What is the working principle of Atomic Absorption Spectroscopy? (3)

UNIT-II

2. a) Explain the importance of cost accounting in industrial management. (5)
- b) Why is the time value of money important in investment decisions? (5)
- c) Define variation and explain its importance in cost analysis. (5)
3. a) What are the basic steps involved in evaluating alternative investments? (6)
- b) Explain elements of cost accounting interest and investment costs. (6)
- c) What are the key measures of profitability? (3)

UNIT-III

4. a) Explain the concept and importance of Materials Management. (8)
- b) What factors influence the location of an industry? (7)
5. a) What are the key steps involved in the decision-making process? (5)
- b) What is materials management? (5)
- c) Write a note on Selection incentives, welfare and society (5)

UNIT-IV

6. a) What factors should be considered while sampling bulk solids? (5)
- b) Explain the role of stationary and mobile phases in GLC. (5)
- c) What are the common methods used for determining particle size? (5)
7. a) Explain the principle of GLC. Discuss giving a neat and well-labelled diagram, the process of GLC in detail. (8)
- b) Discuss in detail Rheological properties of plastics and their analysis. (7)

UNIT-V

8. a) A compound shows λ_{max} at 280 nm, a strong IR peak at 1710 cm^{-1} , and a singlet at δ 2.1 ppm in NMR. Suggest the possible structure and justify your answer. (8)
- b) Explain the principle, instrumentation, and applications of neutron diffraction. (7)
9. a) Explain spin-spin coupling in NMR. Also discuss causes and rules for splitting. (6)
- b) Explain the principle and working of Ion chromatography (6)
- c) Explain the principle of X-ray fluorescence. (3)

x-x-x