

(Set-1)

M.SC-2nd (IC)
Analytical Chemistry

Full Marks : 70

Time : 3 hours

**Answer all questions from Group-A and
any five questions from Group-B**

The figures in the right-hand margin indicate marks

GROUP—A

1. Answer all questions : 2 × 10

(i) What do you mean by significant figures ?

(ii) Write the criteria of good sampling ?

(iii) Explain the term mean deviation ?

(iv) What do you mean by pH_{1/2} ?

(v) What do you mean by ion exchange resin ?

**(vi) Name the factors affecting ion-exchange
equilibria.**

(Turn Over)

(2)

- (vii) What is synergic extraction ?
- (viii) What is molar absorptivity. How it varies with wavelength ?
- (ix) What do you mean by visual colorimetry ?
- (x) What is simultaneous spectrophotometry ?

GROUP-B

Answer any five questions :

2. Discuss different types of errors and how these errors can be minimized ? 10
3. What do you mean by precision and accuracy. How does the accuracy expressed and discuss different methods to determine accuracy ? 10
4. Discuss the mechanism and techniques of solvent extraction. 10
5. How can you synthesize Ion exchange resins write the characteristics of the resin ? How these resins are used for the separation of Lanthanides ? 10

(3)

6. Discuss about various components of spectrophotometer ? 10
7. Discuss on : 5 × 2
- (i) Differential spectrophotometry
- (ii) Reflectance spectrophotometry.
8. Write notes on : 5 × 2
- (i) Applications of solvent extraction
- (ii) Photometric titration.