Con. 4805-09. Pharmaceutical Analysis Oct.09 DY–5123

Sem VII (2 Hours) [Total Marks : 35

28/11/09

N. B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from the remaining **six** questions.
(3) Figures to the **right** indicate **full** marks.
(4) Draw **neat** labelled diagrams wherever **necessary**.

1. (a) Explain the following terms (any **four**) :— 4
   (i) Gradient elution
   (ii) Specific activity
   (iii) Limit of Quantification
   (iv) Gel Permeation Chromatography
   (v) Normal Distribution

   (b) Name the following (any **three**) :— 3
   (i) Two radioisotopes of iodine
   (ii) Two visualisation techniques in TLC
   (iii) Two enzymes commonly used in Elisa
   (iv) A technique used to determine residual solvents.

2. (a) Give the principle of Ion-exchange chromatography. Discuss the various types of ion-exchange resins used. 4

   (b) Enlist the different methods of Thermal analysis. Explain any one method in detail. 3

3. (a) Write note on different types of detectors used in HPLC. Give one advantage of photodiode array detector. 4

   (b) Compare and contrast between Atomic Absorption and Atomic Emission Spectrophotometry. 3

4. (a) Explain the principle for Radioimmuno assays. Give pharmaceutical applications of the same. 4

   (b) Draw a diagram to show working of rheodyne injector system in 'Load' and 'Inject' position. What is meant by an autosampler ? 3

5. (a) Describe various types of columns used in Gas Chromatography. Give one advantage and one disadvantage of gas chromatography over HPLC. 4

   (b) What is meant by validation of analytical methods ? List the validation parameters as per USP. 3

6. (a) Classify the various chromatographic techniques schematically. Explain any two factors that effect planar chromatography. 4

   (b) Calculate the correlation coefficient for the data given in the following table :— 3

| Concentration (mcg/ml) | Relative fluorescence intensity |
|---|---|
| 2 | 21·6 |
| 4 | 40·9 |
| 6 | 59·7 |
| 8 | 81·2 |
| 10 | 100·0 |

7. Write short notes on (any **two**) :— 7
   (a) Statistical Quality Control Charts
   (b) HPTLC
   (c) Sampling Procedures
   (d) Quality Control of Radiopharmaceuticals.

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