

UKA TARSADIA UNIVERSITY
M. Pharm. (Pharmaceutical Analysis) (1st Semester)
040060102: Pharmaceutical Analysis-1

Time : 10:00 am to 1:00 pm

Date : 23/12/2013

Duration: 3 hours

Maximum marks: 70

Instructions:

1. Attempt all questions
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures wherever necessary.

SECTION-1

Q.1] (a) Answer the following: [7 x 1 = 7]

- 1) What do you mean by saponification equivalent of an ester?
- 2) Define: Calibration.
- 3) Define: Specific surface area.
- 4) Define: Prospective validation.
- 5) Give chemical reaction for estimation of amines by acetylation method.
- 6) What is revalidation?
- 7) Which film is used for verification of wave-number scale while calibrating IR spectrophotometer?

(b) Attempt any four: [4 x 2 = 8]

- 1) Write classification of ISE.
- 2) Explain the principle of bromination method for estimation of amines.
- 3) Explain the role of hydroxylamine HCl in quantitative estimation of drugs containing ketone group.
- 4) Particle size is reported as equivalent sphere diameter. Explain.
- 5) How can you express the data for particle size distribution?
- 6) Name the reagents used in calibration of UV-Visible spectrophotometer for (i) Control of wavelengths (ii) Control of absorbance.

Q.2]

(a) Explain the principle and procedure involved in quantitative determination of hydroxyl group. [5]

OR

(a) Discuss qualification of HPLC systems. [5]

(b) What is XRD? Derive and explain Bragg's equation. [5]

OR

(b) Enlist the methods for particle size analysis. Explain the working of Electrical sensing zone instrument with suitable diagram. [5]

Q.3] Attempt any two

[2 x 5 = 10]

- (a) Discuss the applications of instrumental methods for drug metabolism and pharmacokinetics study with suitable examples.
- (b) What is ISE? Write the properties of IS-membranes. Explain working of any one ISE with suitable diagram.
- (c) Explain the procedure for calibration of IR Spectrophotometer.

SECTION-2

Q.4] (a) Answer the following:

[7 x 1 = 7]

- 1) What is Ninhydrin reagent?
- 2) Write any one identification test for Vitamin A.
- 3) Name the analytical methods used for assay of Dexamethasone and its dosage forms.
- 4) Enlist the reagents used for estimation of halogens by Carius method.
- 5) Enlist the analytical methods used for determination of potassium.
- 6) Write the color test for identification of streptomycin sulphate.
- 7) Enlist the analytical methods used for determination of sulphur.

(b) Attempt any four:

[4 x 2 = 8]

- 1) Write the general identification tests for alkaloids.
- 2) Explain the principle of nitrite titration?
- 3) What is FC reagent and where is it used?
- 4) Explain the principle of Carius method for estimation of sulphur.
- 5) Write any two identification test for Xanthines.
- 6) How will you assay Riboflavin dosage forms?

Q.5]

- (a) Describe the principle and procedure involved in the use of 2, 4 DNP in pharmaceutical analysis. **[5]**

OR

- (a) Describe the methods used for identification and assay of Erythromycin and its dosage forms. **[5]**

- (b) Discuss the role of chromatographic methods in analysis of drugs and dosage forms with suitable examples. **[5]**

OR

- (b) Describe the principle and procedure involved in the use of Para dimethyl amino benzaldehyde in pharmaceutical analysis. **[5]**

Q.6] Attempt any two

[2 x 5 = 10]

- (a) Describe the principle and procedure involved in the use of N₁-naphthyl ethylene diamine in pharmaceutical analysis.
- (b) Discuss the principle and procedure involved in analysis of pharmaceutical dosage forms containing Barbiturates.
- (c) Discuss the role of spectroscopic techniques in elemental analysis.