

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

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 is Thermo- microscopy?
- 2) Define: Validation.
- 3) What do you mean by diffraction?
- 4) Give chemical reaction for estimation of hydroxyl group by acetylation method.
- 5) What is Stokes' law?
- 6) Which reagent is used for calibration of UV-Visible spectrophotometer for control of absorbance?
- 7) What is ISE?

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

- 1) Explain the principle for quantitative estimation of esters.
- 2) What is the role of 2, 4-DNP reagent in quantitative estimation of carbonyl compounds?
- 3) Write classification of ISE.
- 4) What is a validation master plan?
- 5) The methods used for particle size analysis have limitations in the range of sizes they can cover. Explain.
- 6) Explain the principle of Hydroxylamine hydrochloride-pyridine method for quantitative estimation of carbonyl compounds.

Q.2]

(a) Explain the concept of equivalent sphere and state its significance. Define Stokes' diameter. [5]

OR

(a) Explain the working of any one crystalline membrane electrode with suitable diagram. [5]

(b) Explain the procedure for calibration of IR Spectrophotometer. [5]

OR

(b) Explain the procedure for calibration of UV-Visible Spectrophotometer. [5]

Q.3] Attempt any two **[2 x 5 = 10]**

- (a) Discuss, with suitable examples, the significance of solubility and particle size determination in product development.
- (b) Explain the principle and procedure involved in quantitative estimation of amines.
- (c) What is XRD? State its applications in pharmacy.

SECTION-2

Q.4] (a) Answer the following: **[7 x 1 = 7]**

- 1) What is FC reagent?
- 2) Write any one identification test for ergotamine tartrate.
- 3) Name the analytical methods used for assay of barbiturates and dosage forms.
- 4) Enlist the reagents used for estimation of sulphur by Messenger's method.
- 5) Enlist the analytical methods used for determination of phosphorus.
- 6) Write the color test for identification of phenobarbitone.
- 7) Name the analytical methods used for determination of sodium.

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

- 1) Write the general identification tests for glycosides.
- 2) Explain the principle of diazotization titration?
- 3) What is Ninhydrin reagent and where is it used?
- 4) Explain the principle of Step-now's method for estimation of halogens.
- 5) Write any two identification test for ascorbic acid.
- 6) How will you assay vitamin B₁ tablets?

Q.5]

(a) Describe the principle and procedure involved in the use of MBTH in pharmaceutical analysis. **[5]**

OR

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

(b) Discuss the role of titrimetric 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 cinnamaldehyde in pharmaceutical analysis. **[5]**

Q.6] Attempt any two **[2 x 5 = 10]**

- (a)** Describe the principle and procedure involved in the use of PDAB in pharmaceutical analysis.
- (b)** Discuss the principle and procedure involved in analysis of pharmaceutical dosage forms containing sulphonamides.
- (c)** Discuss the role of atomic spectroscopy in elemental analysis.