



Name :
Roll No. :
Invigilator's Signature :

CS/B. PHARM(NEW)/SEM-3/PT-301/2011-12

2011

PHARMACEUTICAL ANALYSIS

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

- i) How many number of chelate rings will be formed with ferric ion ?
 - a) 2
 - b) 3
 - c) 4
 - d) 5.
- ii) One demasking agent used in complexometric titration is
 - a) triethanolamine
 - b) chloral hydrate
 - c) dimercaprol
 - d) tiron.
- iii) To remove iron impurities from silica gel G layer, solvents used are
 - a) methanol & conc. HCl
 - b) HClO_4
 - c) HNO_3
 - d) H_2SO_4 .

3126(N)

[Turn over



- iv) Trimethoprim can be titrated by
- non-aq. titration
 - complexometric titration
 - diazotization
 - potentiometric titration.
- v) Ninhydrin spraying reagent is used for detection of
- alkaloids
 - amino acids
 - glycosides
 - saponins.
- vi) In kjeldahl method of nitrogen estimation, the nitrogen is estimated in the form of
- NO_2
 - NO
 - N_2O_5
 - NH_3 .
- vii) In potentiometry which is kept constant ?
- Potential
 - Current
 - Volume of titrant
 - Concentration of the solution.
- viii) Complexing agents are
- Electron donating ion
 - Polydentate
 - Unidentate
 - All of these.
- ix) Oxygen flask combustion analysis is used for the determination of
- Nitrogen
 - Amines
 - Water
 - Halogen.
- x) Hydrochloric acid is
- Amphiprotic solvent
 - Aprotic solvent
 - Protogenic solvent
 - Protophilic solvent.



xi) The compound used for standardization of Karl-Fischer reagent is

- a) Zinc chloride b) Potassium phthalate
c) Disodium tartarate d) Sulphanilamide.

xii) E.m.f. potential for hydrogen is

- a) 0 b) 1
c) 2 d) -1.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following 3 × 5 = 15

2. What do you mean by gradient and isocratic elution ? What is the difference between normal phase and reverse phase chromatography ?
2½ + 2½

3. What problem would occur if
a) water is present in non-aqueous titration ?
b) acetic anhydride amount is more or less than the required amount ?
2½ + 2½

4. What is a metallochromic indicator ? Explain how it works.
1 + 4

5. Explain the different types of EDTA titrations.

6. Why is platinisation done for electrodes in conductometry ?
How is cell constant determined in conductometric titration ?
1 + 4



GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Define chromatography. Classify it with examples. What is the principle of column chromatography ? What are the detection techniques for identification of separated compound in chromatography ? $1 + 4 + 5 + 5$
8. What is the principle of Karl-Fischer Titration ? Why is pH maintained in between 5-7 for this titration ? What are the disadvantages of this method ? $5 + 3 + 7$
9. What is dropping mercury electrode ? Define half-wave potential. What are the factors that affect the diffusion current ? Write the equation for the diffusion current. $3 + 4 + 4 + 4$
10. Write notes on "Oxygen flask combustion method". What is the utility of the method ? $10 + 5$
11. a) Write down the methods of end point detection of diazotisation titrations.
- b) A sample of diphenhydramine hydrochloride (MW 291.8), weighing 0.6120 gm, was dissolved in glacial acetic acid. 15 ml of 3.2% mercuric acetate solution was added and the mixture was titrated to the p-naphthol benzine with 17.12 ml of 0.1145 (N) Perchloric acid. Calculate the per cent purity of the sample. $2 \times 7\frac{1}{2}$

=====