

Question Paper

Exam Date & Time: 28-Dec-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal College of Pharmaceutical Sciences
BPharm End Semester Makeup Examination - Dec-2023

Pharmaceutical Analysis-I [PQA-BP102T - S3]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) ----- is an example for Aprotic solvent. (1)
- [Carbon Tetrachloride](#)
[Hydrogen fluoride](#)
[Sulphuric acid](#)
[Formic acid](#)
- 2) Which one of the following titrations will have the equivalence point at a pH more than 8? (1)
- [HCl Vs \$\text{NH}_3\$](#)
 [\$\text{CH}_3\text{COOH}\$ Vs \$\text{NH}_3\$](#)
[HCl Vs NaOH](#)
 [\$\text{CH}_3\text{COOH}\$ Vs NaOH](#)
- 3) Neutralization curve is expressed as (1)
- [pH Vs pKa](#)
[pH Vs Volume of titrant](#)
[pKa Vs Volume of titrant](#)
[pH Vs Volume of Titrant](#)
- 4) pH range of phenolphthalein indicator is (1)
- [8.3-10.5](#)
[3.2-4.5](#)
[4.5-6.2](#)
[7-8](#)
- 5) Phenolphthalein isin acidic medium. (1)
- [Pink](#)
[Red](#)
[Yellow](#)
[Colourless](#)
- 6) According to Bronsted - Lowry Theory, Acid is a ----- (1)
- [Proton donor](#)

- [Proton acceptor](#)
- [Electron pair donor](#)
- [Electron pair acceptor](#)

7) -----gm of freshly cut lithium is required to prepare 1 litre of 0.1 N lithium methoxide. (1)

- [4.3](#)
- [0.7](#)
- [2.3](#)
- [0.9](#)

8) Thyroid tablets IP are assayed by.....titration. (1)

- [Redox](#)
- [Neutralization](#)
- [Precipitation](#)
- [Complexometric](#)

9) Nernst equation is ----- (1)

- [E = E° + \(nF/RT\) log C](#)
- [E = E° - \(RT/nF\) log C](#)
- [E = E° + \(RT/nF\) log C](#)
- [E = E° - \(nF/RT\) log C](#)

10) Iodine tincture USP is assayed by (1)

- [Bromatometry](#)
- [Potassium iodate titration](#)
- [Cerimetry](#)
- [Dichrometry](#)

11) Starch iodide paper is prepared by immersing a filter paper in _____ and _____ solution. (1)

- [Starch and Iodide](#)
- [Starch and Iodine](#)
- [Starch and HCl](#)
- [Starch mucilage and potassium iodide solution](#)

12) Precipitation will occur if _____ (1)

- [Solubility product constant < ionic product](#)
- [Solubility product constant > ionic product](#)
- [Solubility product constant = ionic product](#)
- [Solubility product constant = zero](#)

13) Ethylenediaminetetraacetic acid has binding sites. (1)

- [3](#)
- [4](#)
- [6](#)
- [7](#)

14) Which one of the following is the correct order of adsorption of indicators on the silver halide (1)

precipitate?

[I⁻ > Br⁻ >](#)

[Cl⁻](#)

[Br⁻ > I⁻ >](#)

[Cl⁻](#)

[Cl⁻ > I⁻ >](#)

[Br⁻](#)

[I⁻ > Cl⁻ >](#)

[Br⁻](#)

- 15) 7.5 g of Sodium nitrite is dissolved in sufficient water to produce 1000 ml to get _____ sodium nitrite solution. (1)

[1 M](#)

[0.05 M](#)

[0.1 M](#)

[0.2 M](#)

- 16) Indicator used in nitrate titration (1)

[Starch Iodide paste](#)

[Starch mucilage](#)

[Potassium iodide solution](#)

[Sodium nitrate](#)

- 17) Rohdamine 6G is example for _____ (1)

[Coating solvent](#)

[Sequestering agent](#)

[Acidifying agent](#)

[Weak-base adsorption indicator](#)

- 18) Non indicator method is also called as _____ (1)

[Mohr's method](#)

[Volhard's method](#)

[Fajan's method](#)

[Gay Lussac's method](#)

- 19) Which among the following is correct for precipitation titration? (1)

[K_{sp} \(AgBr\) < K_{sp} \(AgSCN\) and K_{sp}\(AgI\) < K_{sp}\(AgSCN\)](#)

[K_{sp} \(AgSCN\) < K_{sp} \(AgBr\) and K_{sp}\(AgSCN\) < K_{sp}\(AgI\)](#)

[K_{sp} \(AgI\) < K_{sp}\(AgSCN\) < K_{sp}\(AgBr\)](#)

[K_{sp} \(AgBr\) < K_{sp} \(AgSCN\) < K_{sp}\(AgI\)](#)

- 20) Calculate the formality of sodium chloride (NaCl) solution, 5.58g of which have been dissolved to form 300 mL of the given solution. (Data: NaCl Mol.wt:58.5 g/mol) (1)

[0.32 F](#)

[0.42 F](#)

[0.0003 F](#)

[0.0004 F](#)

II Long Answers

Answer all the questions.

- 1) Explain the theories of acid base titrations with examples. (8)
- a)
- b) Mention 2 limitations for Arrhenius theory. (2)
- 2) Classify redox indicators with examples. (6)
- a)
- b) List the pharmaceutical applications of ceric titrations. (4)

III Short Answers

Answer all the questions.

- 1) Explain the principle in the assay of Bleaching Powder. (5)
- 2) Explain any five approaches to minimize systematic errors in pharmaceutical analysis. (5)
- 3) Explain the principle involved in the estimation of sodium chloride by Precipitation titration. (5)
- 4) Explain the preparation and standardization of 500 mL of 1 M solution of Sodium thiosulphate. (5)
- 5) What is Primary and Secondary standards? (2.5)
- a)
- b) Enlist the requirements to classify a chemical as Secondary standard. (2.5)
- 6) Explain the steps involved in Gravimetric analysis (5)
- 7) Explain the principle involved in Diazotisation titration. (5)

-----End-----