F.Y. B.Pharma (Sem-II) 26/08/2025 ATKT

Duration: 3 Hrs **Total marks: 75**

N.B.: 1. All questions are compulsory
2. Figures to right indicate full marks

Q. I Choose appropriate option for the following multiple choice-based questions. 20

1 The number of mole equivalents of solute dissolved per 1000 ml of solvent is known as _____.
   a. Molarity
   b. Molality
   c. Normality
   d. Mole fraction

2 Insufficient cooling of crucibles before weighing is the example of _____.
   a. Instrumental error
   b. Method error
   c. Indeterminate error
   d. Personal error

3 Acidimetry refers to _____.
   a. Titration of an acid
   b. Titration of a base
   c. Titration of strong acid
   d. Method to determine the pH of a solution.

4 What is the cerimetric titration used to determine?
   a. Concentration of cerium ions
   b. Concentration of oxidizing agent
   c. Concentration of reducing agent
   d. Concentration of acids

5 In an acid-base titration, which of the following indicators is commonly used to detect the endpoint when titrating a weak base with a strong acid?
   a. Methyl orange
   b. Phenolphthalein
   c. Thymol blue
   d. Cresol blue

6 Which electrode is described as mercury electrode covered by a layer of mercurous chloride in contact with a saturated potassium chloride solution.
   a. Standard hydrogen electrode
   b. Silver/silver chloride electrode
   c. Calomel electrode
   d. Glass electrode

7 Protophilic solvents are _____ in nature.

a. Acidic
b. Alkaline
c. Neutral
d. Amphoteric

8 Indirect titration of iodine is also referred as _____.

a. Iodimetry
b. Iodometry
c. Cerimetry
d. Argentometry

9 How many significant figures are in the measurement 9.10 cm?

a. One
b. Two
c. Three
d. Four

10 When 15 ml of acid is neutralised by 25 ml of 0.15 N alkali, the acid concentration is _____

a. 0.025 N
b. 0.25 N
c. 2.5 N
d. 25 N

11 $K_{sp} < [Ag^+]\,[Cl^-]$ indicates _____

a. Saturated solution
b. Unsaturated solution
c. Precipitation occurs
d. No precipitation

12 Sodium chloride I.P. is assayed by _____ method.

a. Mohr's method
b. Fajan's Method
c. Volhard method
d. Modified Volhard's method

13 Quantitative analysis of polarograph is based on _____.

a. Electrode potential
b. Limiting current
c. Half wave potential
d. Migration current

14 Chloral hydrate is used in Complexometric titration as _____

a. Titrant
b. Indicator
c. Masking agent
d. Demasking agent

15 Most common titrant used in alkalimetric non aqueous titration is _____.

a. Hydrochloric acid
b. Perchloric acid
c. Sodium methoxide
d. Lithium methoxide

16 Number of rings observed in the tetravalent ion EDTA complex is _____.

a. Two
b. Three
c. Four
d. Five

17 Potassium chromate is used as an indicator in ____.

a. Mohr's method
b. Volhard method
c. Modified Volhard method
d. Fajan's method

18 Which of the following is a specific conductivity reagent?

a. Potassium chloride
b. Calcium chloride
c. Magnesium chloride
d. Hydrogen chloride

19 According to resonance theory, the benzenoid form of phenolphthalein is _____.

a. Orange
b. Pink
c. Yellow
d. Colourless

20 The degree of agreement between measured value and accepted true value is _____.

a. Accuracy
b. Precision
c. Stoichometric end-point
d. Standardization

Q. II Answer any two questions. (Any 2) **20**

1 Explain the neutralization curve for titration of weak base and strong acid. What is the need for nonaqueous titrations? Write a note on solvents used in non-aqueous titrations. **10**

2 Define Primary Standard and what are the requirements for a substance to be used as Primary standard. Define and classify error with suitable example. Give the methods for error minimization. **10**

3 What is redox titration? Enlist the indicators used in redox titrations What are the advantages of Cerium sulphate as a titrant. Discuss the principle and reaction involved in ceriometric titrations. **10**

Q. III Answer any seven questions (Any Seven) **35**

1 What is coprecipitation? Discuss the types of Argentometric titrations. **5**

2 Discuss methods of expressing concentration. **5**

3 Enlist the types of complexometric titrations. Write the Principle and reaction involved in Replacement titration with a suitable example. **5**

4 Give the difference between iodimetry and iodometry. Why is starch added towards the end of the iodometric titrations? **5**

5 What are indictors? Give explanation of the Ostwald's theory of indicators. **5**

6 What is conductivity. Discuss the construction & working of conductometer. **5**

7 Enlist the reference electrodes and explain the construction & working of Glass Electrode **5**

8 What are pM indicators? Define Ligands and classify them. **5**

9 Write in detail about the construction, working, advantages and disadvantages of DME. **5**

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