Exam Date & Time: 23-Apr-2021 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Analysis-I [PQA-BP102T - S2]

Marks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) One of the following is an electrometric method of analysis (1)

1) Volumetry	2) Gravimetry	3) Potentiometry	4) Photometry

2) Thyroid tablets are assayed by.....titration. (1)

1) Redox	2) Neutralization	3) Precipitation	4) Complexometric

3) Equivalent weight of sodium hydroxide is (1)

1) 35	2) 40	3) 30	4) 20

4) .....is measured using Nephelometer. (1)

1) Conductance	2) EMF	3) scattering of radiation	4) current

5) One of the following is an external indicator (1)

1) Potassium ferricyanide	2) potassium permanganate	3) Starch	4) Ferroin

6) 40 gm of sodium hydroxide dissolved in 1 litre solvent gives .....M solution. (1)

1) 0.1	2) 1	3) 0.01	4) 0.001

7) Concentration of commercially available concentrated acids are usually expressed in (1)

1) % v/v	2) % w/v	3) %w/w	4) M

8) In one of the chemical compound molecular weight and equivalent weight are same (1)

1) Sulphuric acid	2) Oxalic acid	3) Hydrochloric acid	4) Potassium permanganate

9) Mohr's salt is used to standardize ceric ammonium sulphate, but ceric ammonium sulphate is also standardize using one of the following primary standard (1)

1) Oxalic acid	2) Arsenic trioxide	3) sodium oxalate	4) Sodium thiosulphate

10) Ammonium chloride is assayed by Neutralization titration. It is also assayed by (1)

1) Redox titration	2) Complexometry	3) Diazotization titration	4) Precipitation titration

11) 10 ml of 0.25M solution of sodium hydroxide is completely neutralized with 15 ml of hydrochloric acid. What is the molarity of hydrochloric acid? (1)

1) 0.166	2) 0.100	3) 0.010	4) 0.110

12) Non indicator method is also called as _____

1)	Mohr's method		2)	Volhard's method		3)	Fajan's method		4)	Gay Lussac's method	

(1)

13) Modified Mohr's precipitation titration should be carried out in pH range _____

1)	6.6 to 9.0		2)	9.6 to 12.0		3)	6.6 to 8.0		4)	2.6 to 5.0	

(1)

14) If the complex formed is soluble in water, then it is called as _____

1)	Digestion		2)	Occlusion		3)	Peptization		4)	Sequestering agent	

(1)

15) Maximum number of groups that can be bound to the ion is its_____

1)	Co-ordination number		2)	Atomic number		3)	Mass number		4)	Valency	

(1)

16) Which pH indicator is used to determine the endpoint for the titration of hydrochloric acid solution by ammonia solution?

1)	Titrated without indicator		2)	Phenolphthalein		3)	Methyl orange		4)	Eosin	

(1)

17) Levelling solvents are

1)	the solvents in which complete proton transfer takes place		2)	the solvents in which solute is 50% ionized		3)	aprotic in nature		4)	solvents which does not influence acid-base characteristics of solute.	

(1)

18) Equivalence point is the point at which:

1)	change of solution color		2)	volume of the added titrant is equal to the volume of analyzed solution		3)	amount of titrant added to completely neutralize the analyte solution		4)	the time of the titration when the pH = 7	

(1)

19) In this reaction $BrO^{3-} + 5Br^{-} + 6H^{+} \rightleftharpoons 3Br_2 + H_2O$, the equivalent weight of $KBrO_3$ is

(1)

1)	278		2)	50		3)	28		4)	167	

20) In non-aqueous titration of halogen acid salts of base, mercuric acetate is used

1)	Halide ions are too weakly basic to react qualitatively with acetous perchloric acid.		2)	Halide ions are too acidic basic to react qualitatively with acetous perchloric acid		3)	Halide ions will not react otherwise		4)	Halide ions are very reactive	

II Long Answers

Answer all the questions.

1) Explain modified Volhard's and Mohr's method of precipitation titration. (10)

2) Explain the titration curve for ferrous sulphate Vs ceric sulphate. (10)

III Short Answers

Answer all the questions.

1) Classify primary standards with suitable examples. (5)

2) Discuss any three steps of gravimetric analysis. (5)

3) Explain masking and demasking method in complexometric titration. (5)

4) a. Why acetic anhydride is added in the preparation of acetous perchloric acid? (2.5 M)
b. Why water is not used as solvent/ titrant in non-aqueous titration? (2.5 M) (5)

5) Write the reactions involved in titration of weak bases with perchloric acid. (5)

6) Explain the ionic chromophore theory of indicator using phenolphthalein as example. (5)

7) Explain the estimation of ferrous by dichrometry using internal indicator method. (5)

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