Question Paper

Exam Date & Time: 29-Nov-2023 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester 1 - End-Semester Examination November 2023
PQA-BP 102T: Pharmaceutical Analysis - I (Theory)

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) Standard Bromine solution is a mixture of .....in HCl. (1)

- Potassium bromite and potassium bromide
- Potassium bromite and potassium bromate
- Potassium bromate and potassium bromite
- Potassium bromate and potassium bromide

2) .....gm of potassium bromate is required to prepare 1 liter of 0.0167 M solution. (Mol. Wt. of potassium bromate is 167 g/mol) (1)

- 2.28
- 2.58
- 2.78
- 3.78

3) One of the following indicator is used in the assay of Isoniazid (1)

- Methyl orange
- Methyl red
- Phenolphthalein
- Crystal violet

4) Which of the following is not an oxidizing agent? (1)

- $KBrO_3$
- KIO_3
- $K_2Cr_2O_7$
- KI

5) Ferrous sulphate can be estimated by ..... (1)

- Iodometry
- Cerimetry
- Iodimetry
- Bromatometry

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

- Potassium ferricyanide solution
- Potassium permanganate
- Ferroin
- Iodine

7) Which of the following is not correct for oxidation? (1)

- Loses one or more electron
- Addition of oxygen
- Removal of hydrogen
- Addition of hydrogen

8) % of Fe in haematite can be determined by ..... (1)

- Bromatometry
- Cerimetry
- Potassium iodate titrations
- Dichrometry

9) The pH at neutralization for the titration of 0.1 M acetic acid (pKa: 4.76) with 0.1 M sodium hydroxide solution is (1)

- 4.5
- 4.7
- 7.0
- 8.7

10) Protophilic solvents are (1)

- basic in nature and normally react with acids to form solvated protons
- acidic in nature and enhances the ability to donate a proton to enhance the strength of weak bases
- acidic & basic nature
- slightly basic in nature

11) The method of analysis based upon the measurement of mass is (1)

- Iodimetry
- Volumetry
- Gasometry
- Gravimetry

12) One of the following is the primary standard for potassium permanganate (1)

- Ferric sulphate
- Ferrous sulphate
- Mohr's salt
- Oxalic acid

13) Scattering of electromagnetic radiation is measured in (1)

- Colorimetry
- Spectrophotometry
- Nephelometry
- Conductometry

14) One of the following chemical compound has same molecular weight and equivalent weight? (1)

- Oxalic acid anhydrous
- Oxalic acid dihydrate
- Sulphuric acid
- Ferrous ammonium sulphate

15) .....is used for expressing the concentration of commercially available hydrochloric acid. (1)

- % w/v
- % w/w
- % v/v
- Normality

16) How many mL of 1M sodium hydroxide is required to prepare 1000 mL of 0.1M solution? (1)

- 100
- 120
- 150
- 200

17) Which one of the following type of diazotization titration is used for estimation of paracetamol? (1)

- Direct titration
- Indirect titration
- Reverse method
- Special method

18) Which one of the following statement is correct for precipitation titration? (1)

- The precipitating reagents should be mixed slowly and with constant agitation.
- The precipitation should be carried out in concentrated solution.
- The precipitation should be carried out in cold solution.
- Crystalline precipitate should be digested for a shorter time.

19) Which one of the following is the limitation of Fajan's method? (1)

- The pH controls the ionization of the indicator, which in turn controls the adsorption of the indicator.
- Adsorption indicators reduced the tendency of silver halides toward photodecomposition, which blackens the precipitate.
- Coagulation of the precipitate must be avoided as it increases the surface areas available for the adsorption of the indicator.
- The precipitate must be reasonably insoluble so that its own lattice ions are more adsorbed than the indicator ions.

20) ..... g of disodium edetate in sufficient distilled water to produce 1000 ml. (1)

- 37.2
- 18.6
- 3.72
- 1.72

II Long Answers

Answer all the questions.

1) Write the principle in the potassium iodate titration with reactions. (5)

a.)

b.) Write the principle in the assay of isoniazid by bromatometry. (5)

2) Explain in detail about direct, replacement and back complexometric titrations with suitable examples. (10)

III Short Answers

Answer all the questions.

1) Explain the principle in the ephedrine hydrochloride by non-aqueous titrations. (5)

2) Explain the theories of acid-base indicators using phenolphthalein as an example. (5)

3) Classify solvents used in non-aqueous titration with examples. (5)

4) Why potassium hydrogen phthalate is a primary standard and sodium hydroxide a secondary standard? (5)

5) Explain Modified Mohr's method in detail. (5)

6) Explain the steps involved in gravimetric analysis. (5)

7) Explain the preparation and standardisation of 0.05 M of Sodium thiosulphate solution ($Na_2S_2O_3 \cdot 5H_2O$). (5)

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