Question Paper

Exam Date & Time: 28-Dec-2017 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS- DECEMBER 2017 - JANUARY 2018
PROGRAM: BPHARM SEMESTER 1
DATE: 28/12/2017
TIME: 9:30AM - 12:30PM

Pharmaceutical Analysis-I [PQA-BP102T]

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

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) The redox forward reaction is spontaneous with respect to the value of K and E^0 (1)

K= > 1; E^0 = > 0 | K= < 1; E^0 = < 0 | K= > 1; E^0 = 0 | K= 1; E^0 = 0

2) 0.01 M potassium permanganate can be standardized using (1)

oxalic acid | cinnamic acid | salicylic acid | sodiumhydroxide

3) In an acidified solution of potassium dichromate(VI) ($K_2Cr_2O_7$), Dichromate ion ($Cr_2O_7^{-2}$) becomes reduced to (1)

Chromate (V) ions | Chromium (III) ions | Chromium (II) ions | Chromium (VI) ions

4) The occlusion is the type of (1)

pre-precipitation. | post-precipitation | re-precipitation | co-precipitation

5) The titrant employed in estimation of weak acids by non aqueous titration (1)

acetous perchloric acid | p-toluene sulphonic acid. | O- tetrabutyl ammonium hydroxide | potassium hydrogenphthalate

6) The formation of a second coloured precipitate at the end point in a precipitation titration (1)

Mohr's titration | Volhard's titration | Fajan's titrations | Gay-Lussac Method

7) Indicator used in sulfonamides by diazotization titration (1)

Starch Iodide paste | Starch mucilage | Potassium iodide solution | Sodium nitrate

8) The chemical used in making perchloric acid solution anhydrous (1)

acetone | acetic acid | acetic anhydride | mercuric acetate

9) The titrant employed in estimation of dapsone by diazotization titration (1)

Sodium nitrate | Sodium nitrite | Sodium nitride | Sodium oxide

10) Calibration of apparatus is not required for the determination of percentage purity by (1)

Cerimetric analysis | Complexometric analysis | Gravimetric analysis | Volumetric analysis

11) Which of the following statement is not true with respect to "Proportional errors' (1)

It is dependent on the amount of substance being analysed | These errors occur because of the presence of interfering impurities in the sample. | The relative magnitude of constant error would increase with the increasing quantity of the substance being analysed. | Proportional errors are also called as additive errors

12) Which among the following is an example for pM indicator? (1)

Phenolphthalein | Methyl orange | Ferroin | Murexide

13) As per the ionic theory of indicators (1)

Undissociated molecules of indicators differ in | Colour change is a function of the structure of the | Existence of "tautomers" are | There exist an equilibrium

colour from their dissociated counterparts	molecule, and the change in the structure leads to isomerism.	responsible for the colour change	between the tautomers.

14) The pH range of an indicator can be obtained from the equation (1)

pH= pKa +log [salt]/[Acid]	pH= pK Â± 1	pH = 1/2pkw +1/2pKa-1/2 pC	pH = 1/2pkw -1/2pKb +1/2 pC

15) pH of a 0.1 M acetic acid is.....(k_a of acetic acid = 1.82 X 10^{-5}) (1)

2.87	1.38	4.58	3.92

16) Identify the analytical technique that is also an effective separation technique (1)

Absorption spectroscopy	Potentiometry	Titrimetry	Gas chromatography

17) Which of the following is not a primary standard (1)

Potassiumhydrogen phthalate	Sodium carbonate	Sodium hydroxide	Oxalic acid

18) What is the molarity of a solution of sodium chloride prepared by dissolving 1.47 g in 25 mL of water (t weight of Na= 23g; Cl-=35.5g) (1)

0.5 M	1 M	2 M	5 M

19) How many significant figures are present in the number 0.000670 (1)

6	7	2	3

20) Which of the following statement is not true with respect to "constant errors' (1)

It is independent of the amount of substance being analysed	The relative magnitude of the constant error would increase with the decreasing quantity of the substance being measured	The relative magnitude of constant error would increase with the increasing quantity of the substance being analysed.	Constant errors are also called as additive errors

II Long Answers

Answer all the questions.

1) Explain the conditions involved in the iodometric determination. Explain the different methods to determine the equivalent weight of potassium dichromate in redox titration. (10)

2) Determine the pH during the course of the titration of 100 mL of 0.1 M acetic acid with 0.1 M sodium hydroxide solution and plot the titration curve. Suggest suitable indicators for the same. (10)

III Short Answers

Answer all the questions.

1) Explain the role of acetic anhydride in preparation of standard acetous perchloric acid and mercuric acetate used in the estimation of halogen acid salts of bases by non-aqueous titration. (5)

2) Explain principle of Fajan's method for the estimation of sodium chloride (5)

3) What is co-precipitation? enlist its types. Compare volumetric and gravimetric analysis (5)

4) Why starch solution is added near to the end point of iodine titration? Write the applications of diazotization titration. (5)

5) Classify the analytical techniques and write briefly on volumetric methods. (5)

6) Write briefly on determinate and indeterminate errors. (5)

7) Explain the principle of complexometric titration. What are the ideal requirements for pM indicators? (5)

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