

Printed Pages- 10

Roll No.

341152(41)

**B. Pharmacy (First Semester) Examination,
Nov.-Dec. 2020**

(PCI Scheme)

(Pharmacy Branch)

PHARMACEUTICAL ANALYSIS-I

Time Allowed : Three hours

Maximum Marks : 75

***Note : Question paper contains three Sections. Read
the instructions of each section carefully.***

Section-A

20×1=20

(Multiple Choice Questions)

***Note : Attempt all questions. Each question carries
1 mark.***

341152(41)

PTO

[2]

1. (i) Which one is primary standard :
 - (a) NaOH
 - (b) KOH
 - (c) Potassium hydrogen phthalate
 - (d) None
- (ii) Phenolphthalein changes its colour in
 - (a) Acids
 - (b) Alkalis
 - (c) Water
 - (d) Salt solutions
- (iii) 5% NaOH solution means :
 - (a) 5 g NaOH in 1 L of water
 - (b) 5 g NaOH in 1 kg of water
 - (c) 5 g NaOH in 1000 ml of water
 - (d) 5 g NaOH in 100 ml of solution
- (iv) Which zeros are significant in the number 0.01030 :
 - (a) Only the zero at the end is significant

[3]

- (b) Only the zero between the 1 and 3 is significant
- (c) The zeros between the 1 and 3 and the zero after the 3 is significant
- (d) All of the zeros are significant
- (v) Glacial acetic acid is an example of :
 - (a) Protogenic solvent
 - (b) Protophillic solvent
 - (c) Amphiprotic solvent
 - (d) Aprotic solvent
- (vi) The D and L isomeric forms can be distinguished by :
 - (a) Polarimetry
 - (b) Refractometry
 - (c) Potentiometry
 - (d) Conductometry
- (vii) A technique for determining the amount of a certain substance by doing a titration :
 - (a) Stationary phase

[4]

- (b) Volumetric analysis
- (c) Empirical formula
- (d) Primary standard
- (viii) Type of quantitative analysis in which the amount of a species in a material is determined by converting the species to a product that can be isolated completely and weighed.
 - (a) Paper chromatography
 - (b) Volumetric analysis
 - (c) Gravimetric analysis
 - (d) Equivalence point
- (ix) A laboratory procedure where a measured volume of one solution is added to a known volume of another solution until the reaction is complete :
 - (a) Titration
 - (b) Titration curve
 - (c) Back titration
 - (d) Pipette

[5]

- (x) Solvent used in non-aqueous titrations :
 - (a) Water
 - (b) Alcohol
 - (c) Glacial acetic acid
 - (d) Mixture of acetic acid and water
- (xi) Which one of the following is strong acid :
 - (a) Acetic acid
 - (b) Hydrochloric acid
 - (c) Carbonic acid
 - (d) Citric acid
- (xii) Which one is aprotic solvent?
 - (a) Chloroform
 - (b) Benzene
 - (c) Both
 - (d) None
- (xiii) Which one is used as indicator for non-aqueous titration?
 - (a) Crystal violet

[6]

- (b) Thymol blue
 - (c) Oracet blue B
 - (d) All of the above
- (xiv) Which of the following is added for the titration of halogen acid salt of weak bases?
- (a) Lead acetate
 - (b) Mercuric acetate
 - (c) Bismuth iodide
 - (d) Copper sulphide
- (xv) Which of the following steps is involved in gravimetric analysis :
- (a) Titrimetry
 - (b) Precipitation
 - (c) Non-aqueous titrations
 - (d) Complexometry
- (xvi) The point during a titration when the number of H^+ ions and OH^- ions are equal. This is at the middle of the steepest part of the titration curve :

[7]

- (a) Stationary phase
 - (b) Empirical formula
 - (c) Gravimetric analysis
 - (d) Equivalence point
- (xvii) What is the best method for determining the concentration of a NaOH solution :
- (a) Titrate the solution with acetic acid until a red/clear endpoint is detected
 - (b) Standardize with potassium hydrogen phthalate
 - (c) Check the pH with litmus paper
 - (d) Measure the pH of the solution with a calibrated pH electrode
- (xviii) Process in which substance gains electrons is called :
- (a) Oxidation
 - (b) Hydrogenation
 - (c) Sublimation
 - (d) Reduction

[8]

(xix) Polarography is a :

- (a) Chemical method of analysis
- (b) Electrochemical method of analysis
- (c) Chromatographic method of analysis
- (d) None of the above

(xx) Which of the following is a oxidizing agent?

- (a) Potassium iodide
- (b) Potassium iodate
- (c) Iodide ion
- (d) None of the above

Section-B $2 \times 10 = 20$

(Long Answer Types Questions)

Note : Attempt any two questions. Each question carries 10 marks.

2. Write a brief note on redox titration, with principle and application of titrations involving iodine.

[9]

3. Explain various theories of indicators, with suitable examples.
4. Discuss about gravimetric analysis, along with the principle and steps involved in it.

Section-C $7 \times 5 = 35$

(Short Answer Types Questions)

Note : Attempt any seven questions. Each question carries 5 marks.

5. Write about the sources of error and its types.
6. Explain various methods involved in precipitation titration.
7. Illustrate the process of estimation of calcium gluconate.
8. Illustrate reference and indicator electrodes.
9. Define neutralization curve and draw the curves involved in various acid base titrations with examples.
10. Write a descriptive note on methods of expressing concentrations.

11. Give principle and application of conductometric titrations.
12. Describe diazotisation titration and give its application.
13. Give principle and explain working of dropping mercury electrode.