

**End Semester/Reappear (Semester I) Examination March 2022**

**Programme: B. Pharm**  
**Subject: Pharmaceutical Analysis I**  
**Subject Code: BP102**  
**Enrollment No: \_\_\_\_\_**

**Full Marks: 75**  
**Time: 3 Hrs**

**Section I**

- 1. Objective type questions. Answer all questions. 20 x 1 = 20**
- Dimercaprol is used as complexing agent for complexation of  
a) Mercury    b) Arsenic    c) Lead    d) All
  - Digestion of precipitate is known as  
a) Aging    b) Gravimetry factor    c) Co-precipitate    d) Ostwald precipitate
  - Which drug is assayed by redox titration?  
a) Metformin    b) Cinchonism    c) Digoxin    d) Ferrous gluconate tablets
  - Which indicator are example of self-indicator?  
a) Sudan red    b) Methylene blue    c) Potassium permanganate    d) None
  - Iodometry refers to titration which deals with  
a) Addition of iodine    b) liberation of iodine    c) Starch solution    d) Standard solution of iodine
  - If acidified Potassium Manganate (VII) acts as oxidizing agent, color changes from .....  
a) orange to red    b) Purple to green    c) Purple to colorless    d) yellow to red
  - \_\_\_\_\_ is not an Amphiprotic solvent.  
a) Water    b) Alcohol    c) Acetic acid    d) None
  - Which of the following is used as an indicator in the titration of a strong acid and a weak base?  
a) Phenolphthalein    b) Thymol blue    c) Fluorescein    d) Methyl orange
  - If 30 ml of acid is neutralized by 15 ml of 0.2 N alkali, then the concentration of acid is  
a) 0.4 N    b) 0.1N    c) 0.5N    d) 0.15 N
  - What is the molarity of solution of barium hydroxide, if 35 ml of 0.1 M HCl is used in the titration of 25 ml of the barium hydroxide solution?  
a) 0.35    b) 0.07    c) 0.28    d) 0.14
  - Phenolphthalein changes color in:  
a) Acid    b) Base    c) water    d) Salt solution
  - According to Lewis theory, acid is:  
a) Electron pair donor    b) Sources of H<sup>+</sup> ion    c) Electron pair acceptor    d) Sources of OH<sup>-</sup> ion
  - Acetic acid is an example of \_\_\_\_ solvent.  
a) Aprotic    b) Amphiprotic    c) Protophilic    d) Protogenic
  - Which one is used as indicator for non-aqueous titration?  
a) Crystal violet    b) Thymol blue    c) Both A & B    d) None of above
  - Phenolphthalein has pH range  
a) 6.8-8.4    b) 1.2-2.8    c) 8.3-11.0    d) 4.2-6.3
  - The color change due to ionization of the acid base indicators  
a) Ostwald theory    b) Chromophore theory    c) Quinonoid theory    d) Resonance theory
  - Properties of primary standard include:  
a) Stability and high purity    b) high purity and low solubility    c) Inexpensive and easily available  
d) All of the above

- xviii. Properties of primary standard include  
a) High purity    b) Low reactivity    c) High equivalent    d) All of above
- xix. First edition of Indian Pharmacopoeia was published in  
a) 1960    b) 1966    c) 1955    d) 1966
- xx. Error arise due to individual analyst responsible for them  
a) Method error    b) Instrumental error    c) Personal error    d) Random error

2. **Fill in the blanks.**

**5 x 1 = 5**

- a. Reduction involves.....
- b. .... is chelating agent.
- c. Due to poor calibration ..... error arises.
- d. In argentimetric titration, the titrant is .....
- e. Assay of ferrous sulfate is based on .....type of titration.

**Section II**

3. **Short Answer type questions. Answer any five.**

**5 x 4 = 20**

- a. Summarize the process to calculate equivalent weight and molecular weight of a substance with examples.
- b. Explain in detail the leveling effect in non-aqueous titration.
- c. Describe about indicators. Explain the theory of indicators used in acid-base titrations.
- d. Give the applications of the Gravimetric technique in quantitative determination of barium as Barium sulphate.
- e. Explain theory of redox titration.
- f. Explain the mechanism of action of indicators in Fajan's method.

**Section III**

**Long Answer type questions. Answer any three.**

**3 x 10 = 30**

4. a. Explain the word standardization. What type of substances should be standardized?  
b. Describe the Pharmacopoeia in detail.
5. Enumerate the instrumental methods of end point detection and types of complexometric titration.
6. Explain dropping mercury electrode and rotating platinum electrode.
7. Define oxidation and reduction. Explain the principle involved in titration with potassium iodate. Give suitable examples with its applications.
8. Define primary and secondary standards. Give examples of primary standards used in different types of titrations. Enlist the ideal properties of primary standard.

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