Seat No.:---------- *Enrolment No.:----------*

UKA TARSADIA UNIVERSITY

Maliba Pharmacy College

B. Pharm 3nd Semester Internal Examination Nov 2012

030020304- Pharmaceutical analysis I

Time: 10:00 a.m. To 1:00 p.m. Max. Marks: **70**

Date: 06/11/2012

Instructions:

- Question no. **1 is compulsory.**
- From Q.2 to Q.7 attempt any **four** questions.
- Make suitable assumption whenever necessary.
- Figures to the right indicate full marks.

Q.1 (a) Define following terms: (any six) **06**

1. Normality
2. Equivalence point
3. Buffer solution
4. Di-electric constant
5. Chelate
6. Formal potential
7. Adsorption indicator
8. Gravimetric factor

(b) Comment on following statements: (any four) **08**

1. Aqueous solutions of sodium acetate are alkaline in nature.
2. Water is a leveling solvent for all mineral acids.
3. Organic solvent is added in chloride determination by Volhard's method.
4. Potassium iodide is used in preparation of standard solution of iodine.
5. Post precipitation is a desirable process in gravimetric analysis.
6. Diazotization titrations are carried out at low temperature.

Q.2 (a) Explain the phenomena of hydrolysis of salt with an example. **04**

(b) Explain various acid-base concepts with examples. **05**

(c) Construct the titration curve for titration of 20.0 mL 0.1 M hydrochloric acid with 0.1 M sodium hydroxide solution. **05**

Q.3 (a) Classify the solvents according to their acid base character with examples. **04**

(b) Discuss types of EDTA titrations with examples. **05**

(c) A 50.0 mL solution of 0.005 M calcium ion, buffered to pH 10.0, is titrated with 0.01 M EDTA solution. Calculate the calcium ion concentration after the addition of following volumes of titrant. **05**

1. 20.0 mL
2. 25.0 mL
3. 30.0 mL

Q.4 (a) Differentiate following with examples: **04**

1. Qualitative analysis and Quantitative analysis
2. Accuracy and Precision

(b) Write brief classification of pharmaceutical analytical methods with examples. **05**

(c) Explain the term 'error'. Discuss types of analytical errors. **05**

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Q.5 (a) Explain the terms: Liquid junction potential, Salt bridge. **04**

(b) Classify redox indicators with examples. Write in detail about any one. **05**

(c) Differentiate following with examples: **05**

1. Iodometry and Iodimetry
2. Reference electrode and Indicator electrode

Q. 6 (a) Enlist the factors affecting solubility of precipitates and discuss any two in detail. **04**

(b) Explain the term 'coprecipitation'. Write in brief about procedures used to minimize coprecipitation. **05**

(c) A 50.0 mL solution of 0.0400 M Fe2+ is titrated with 0.0800 M Ce+4 in sulfuric acid solution. Calculate the potential of the solution (referred to H2) after the addition of following volumes of titrant: (a) 10.0 mL (b) 25.0 mL and (c) 30.0 mL (Standard reduction potential for Fe+3/Fe+2 = 0.68 volt and for Ce+4/Ce+3 = 1.44 volt) **05**

Q.7 (a) Explain the term 'Immunoassay. Write a short not on RIA. **04**

(b) Write a detailed note on Karl Fischer titration. **05**

(c) Calculate the solubility of silver acetate (pK_{sp} =3.0) at pH values: 2.0 and 8.0 **05**

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