

C.U.SHAH UNIVERSITY

WADHWAN CITY

University (Winter) Examination -2013

Course Name :M.Sc(Chemistry(Sem-I)

Subject Name: -Analytical Chemistry

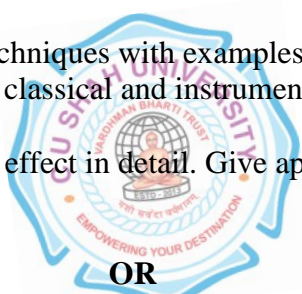
Duration :- 3:00 Hours

Date : 09/12/2013

Instructions:-

- (1) Attempt all Questions of both sections in same answer book / Supplementary.
- (2) Use of Programmable calculator & any other electronic instrument is prohibited.
- (3) Instructions written on main answer Book are strictly to be obeyed.
- (4) Draw neat diagrams & figures (If necessary) at right places.
- (5) Assume suitable & Perfect data if needed.

SECTION I

- Q-1 Give answer of followings** **7**
- a) Define - analytical chemistry
 - b) Define - solubility product
 - c) Define - analytical sample
 - d) Define - Primary and secondary standard
 - e) Define – Hydrolysis
 - f) Difference between $\mu\text{g/ml}$ and ppm as unit of concentration
 - g) Define - standardization and calibration
- Q-2 Give answer of followings** **14**
- a) Classify analytical techniques with examples. Give advantages and disadvantages of classical and instrumental methods of analysis.
 - b) Explain common ion effect in detail. Give application of the same in detail.
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OR
- Q-2 Give answer of followings** **14**
- a) Derive equation for finding pH of aqueous solution of Ammonium Chloride
 - b) Calculate solubility product of silver chromate (Ag_2CrO_4) if its solubility is 2.5×10^{-2} g/L.
- Q-3 Give answer of followings** **14**
- a) Explain principle behind titrimetric analysis of Calcium Gluconate. Explain different types of complexometric titration.
 - b) Explain law of mass action in detail. Give a brief account on sampling of solids.
- OR**
- Q-3 Give answer of followings** **14**
- a) Explain theories of indicator for neutralization titration. Give different types of redox indicator.
 - b) Write a note on factors affecting chemical reaction in solution.



SECTION II

- Q-4 Give answer of followings**
- a) Define – Phosphorescence 1
 - b) Comment on following sentences
 - I. Detector in flourimeter is at 90° of source to sample cell line. 2
 - II. Atomic absorption spectroscopy is more selective than of flame photometry 2
 - III. Kjedadhl’s method is actually not estimating protein. 2
- Q-5 Give answer of followings** 14
- a) Write a note on estimation of moisture in detail
 - b) Give a brief note on analysis of carbohydrates in food samples
- OR**
- Q-5 Give answer of followings** 14
- a) Explain principle of flame photometer. Draw a block diagram of flame photometer. Explain different types of burners of flame photometer.
 - b) Derive lambert – beer’s law. Explain deviation in the law in short.
- Q-6 Give answer of followings** 14
- a) Explain principle of turbidimetry. What are the requirements of the sample to be fulfilled for estimation by turbidimetry? Explain instrumentation of turbidimetry in detail.
 - b) Differentiate followings
 - I. Fluorescence and Phosphorescence
 - II. Turbidimetry and nephelometry
- OR**
- Q-6 Give answer of followings** 14
- a) Explain jablonski diagram in detail.
 - b) What are factors affecting fluorescence? Give a detail about each factor.

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