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V—210—2017

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2017

(CBCS Pattern)

ANALYTICAL CHEMISTRY

Paper IV (CCAC-II)

(Basic Analytical Chemistry—II)

(MCQ + Theory)

(Monday, 27-11-2017)

Time : 10.00 a.m. to 12.00 noon

Time—Two Hours

Maximum Marks—40

- N.B. :—*
- (i) All questions are compulsory.
 - (ii) MCQs should be attempted only on OMR answer-sheet.
 - (iii) Darken only one circle for the answer of an MCQ.
 - (iv) Negative marking system is applicable for MCQs.
 - (v) Use black ball point pen to darken the circle of correct choice in OMR answer-sheet.
 - (vi) Circle once darkened is final. No change is permitted.

MCQ

1. Select the *correct* answer from the following Multiple Choice Questions : 10

- (i) Dielectric constant value of ammonia is
 - (a) 30.2
 - (b) 90.4
 - (c) 22.0
 - (d) 75
- (ii) Self ionisation process takes place in the following solvent :
 - (a) H₂O
 - (b) CCl₄
 - (c) C₆H₆
 - (d) C₆H₅OH
- (iii) KMnO₄ is a reagent.
 - (a) Reducing
 - (b) Complexing
 - (c) Precipitating
 - (d) Oxidising

P.T.O.

- (iv) In gravimetric analysis the term 'gravi' means
- (a) To locate (b) To weigh
(c) To measure (d) To find
- (v) Solubility of a substance is expressed as
- (a) gram/litre (b) mili/litre
(c) kilo/litre (d) centi/litre
- (vi) BaSO_4 is type of the precipitate.
- (a) Gelatinous (b) Curdy
(c) Amorphous (d) Crystalline
- (vii) Co-precipitation process occur due to
- (a) Surface adsorption (b) Isomorphic inclusion
(c) Occlusion (d) All of these
- (viii) The organic precipitant 8-Hydroxy quinoline is used to precipitate ion.
- (a) Na^+ (b) Al^{3+}
(c) Ba^{++} (d) K^+
- (ix) Dimethyl glyoxime is used as organic precipitant for precipitation of
- (a) Calcium (b) Aluminium
(c) Nickel (d) Sodium
- (x) 1-nitroso-2-naphthol can also be known by name :
- (a) 2-nitroso- α -naphthol (b) nitroso-naphthol
(c) 4-nitroso- β -naphthol (d) α -naphthol- β -naphthol

Theory

2. Attempt any *two* of the following :

2×5=10

- (a) Distinguish between volumetric and gravimetric analysis.
(b) Discuss the general principle of gravimetric analysis.
(c) Define solvent. Give the classification of solvent.
(d) Explain the different types of precipitates.

3. Attempt any *two* of the following : 2×5=10
- (a) Explain the terms :
 - (i) Post-precipitation
 - (ii) Digestion of precipitate.
 - (b) Explain the procedure for drying of the precipitate.
 - (c) Explain oxidising and reducing agents with suitable example.
 - (d) Discuss the characteristics of precipitate.
4. Attempt any *two* of the following : 2×5=10
- (a) Define the terms :
 - (i) Coagulation
 - (ii) Peptization.
 - (b) Write a note on Co-precipitation.
 - (c) Explain the use of 8-hydroxy quinoline as precipitant in gravimetric analysis.
 - (d) Describe in brief the use of cupron in quantitative chemical analysis.