

647510

MSCanaCC4010

Seat No : _____

M.Sc.(Chem.) Semester - 1 (CBCS) Examination

Oct/Nov. -2018

ANALYTICAL CHEMISTRY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
-

Q. 1 (a) Answer the following questions.

[14 Marks]

1. Briefly explain the following terms (a) Robust method (b) Rugged method

Q. 1 (b) Answer any two questions out of three.

1. Give an account of Sampling and enlist general sampling errors.
2. Discuss classification of analytical methods.
3. Define the term calibration and explain the calibration of pH meter.

Q. 2 (a) Answer the following questions.

[14 Marks]

1. Explain the term with example. (a) Molality (b) Formality

Q. 2 (b) Answer any two questions out of three.

1. Explain the Mole concept with suitable example.
2. Define Normality and give the explanation of equivalent weight with suitable example.
3. Answer the following:
 - (a) Calculate the amount of KMnO_4 present in 200 ml 0.1N solution.
(Eq.Mass of $\text{KMnO}_4 = 31.6$)
 - (b) Determine the amount of Na_2SO_4 & BaCl_2 required to prepare 5 g of BaSO_4 . (mw of Na_2SO_4 , BaCl_2 & BaSO_4 is 142.04, 208.23 & 233.38 respectively)

Q. 3 (a) Answer the following questions.

[14 Marks]

1. Explain acid-base theory with suitable example

Q. 3 (b) Answer any two questions out of three.

1. Give an account of complexometric titrations.

2. Describe Fajan's method for argentometric titrations.
3. Draw the schematic diagram of pH electrode and explain its working.

Q. 4 (a) Answer the following questions.

[14 Marks]

1. What is Environment? Briefly explain its segments.

Q. 4 (b) Answer any two questions out of three.

1. Give an account of Eutrophication.
2. Define air pollution and discuss classification of air pollutants.
3. Give an outline of water pollution and explain its quality parameters.

Q. 5 (a) Answer the following questions.

[14 Marks]

1. Explain methods for the determination of sulphide (S^{2-}) as air pollutant.

Q. 5 (b) Answer any two questions out of three.

1. Discuss sampling techniques for gases and particulates.
2. Write a note on estimation of Iron in water sample.
3. Discuss the functioning and role of Wet Scrubber with schematic diagram.
