

F.Y.B.SC. SEM – I (2014 Course) : SUMMER - 2019
SUBJECT : CHEMISTRY : PHYSICAL AND INORGANIC CHEMISTRY (C– II)

Day : Monday
Date : 08/04/2019

Time : 12.00 NOON TO 02.00 PM
Max. Marks : 40

S-2019-0935

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SAME** answer book.
- 4) Use of log table/non-programmable calculator is **ALLOWED**.

SECTION – I

Q. 1 Attempt **ANY TWO** of the following: (10)

- a) Discuss different factors affecting the rate of reaction.
- b) Explain the properties of the third order reaction.
- c) What are the shortcomings of the distribution law?

Q. 2 Attempt **ANY TWO** of the following: (10)

- a) Define slope. How is it determined?
- b) Describe the hydrolysis of methyl acetate.
- c) Discuss the modifications of distribution law with respect to association and dissociation of solute.

Q. 3 Solve **ANY ONE** of the following: (05)

- a) If $y = (x^2 - 2)(x + 2)$, $\frac{dy}{dx} = ?$
- b) In a certain unimolecular reaction the time for half change was 128.5 minutes. Find the velocity constant.

SECTION - II

B) Attempt **ANY ONE** of the following: (05)

- a) Define oxidation number. Calculate oxidation number of
 - i) 'S' in H_2SO_4
 - ii) Cr in $K_2Cr_2O_7$
- b) Write a note on standardization of a solution.

Q. 4 Attempt **ANY FIVE** of the following: (10)

- a) Define the terms oxidizing agent and reducing agent.
- b) What are the oxidation states of N in N_2 , NO , NO_2 , NO_3^- ?
- c) Find the amount of the substance to be weighed to prepare 500 ml 0.05 N solution of NaCl (Atomic wts. Na = 23, Cl = 35.5)
- d) Calculate oxidation state of 'S' in $(S_4O_6)^{2-}$.
- e) What do you mean by Molarity of a solution?
- f) What will be the normality of 250 ml solution containing 0.80 g of NaOH? (Atomic wts. Na = 23, O = 16, H = 1)
- g) What are the requirements of a primary standard substance?