Day : Saturday

Time : 02:00 PM-05:00 PM

Date : 10/12/2022

W-18380-2022

Max. Marks : 60

N.B :

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Answers to both sections should be written in **SAME** answer book.
4) Use of scientific **CALCULATOR** is allowed.

SECTION - I

Q.1   Attempt **ANY TWO** of the following: **(12)**

a) Draw neat diagrams of vapour pressure and boiling point compositions.
b) What are the simultaneous reactions? Explain successive reaction.
c) Explain electrical precipitation of smoke method.

Q.2   Attempt **ANY THREE** of the following: **(12)**

a) Discuss the effect of temperature on rate of reaction.
b) The strength of HCl solution is 1.825 gm/lit. if the equivalent weight of HCl is 36.5, what is its normality?
c) Find the normalities of 0.1M H_2SO_4, 0.05M H_3PO_4 , 0.3M $Ca(OH)_2$ and 0.1M $Cr(OH)_3$.
d) The rate constant for a chemical reactions at 599 K is $(1/7)^{th}$ times of that at 661 K. Calculate the energy of activation. (R= 2 Cals)

Q.3   **A)**   Attempt **ANY ONE** of the following: **(06)**

a) Give details of phenol-water system.
b) Define : Normality, Molarity, Molality, and mole fraction.

SECTION - II

Q.3   **B)**   Attempt **ANY ONE** of the following: **(06)**

a) Describe the standardization of silver nitrate by Fajan's methods.
b) Explain the titration curve for a strong acid and a weak base. Which indicator will you choose for this titration? why?

Q.4   Attempt **ANY TWO** of the following: **(12)**

a) What is complexation reaction? Illustrate with suitable example.
b) Describe the method of standardization of iodine with $Na_2S_2O_3$ solution.
c) Write a note on "mixed indicator".

Q.5   Attempt **ANY FOUR** of the following: **(12)**

a) Write the calibration method of pipette.
b) Define: i) End point ii) Equivalence point iii) Neutralization point.
c) Define: Molecular weight, equivalent weight and ppm.
d) How to prepare a standard solution?
e) How much ml of 0.2 N HCl is required to neutralize 25.0 ml of 0.1 N NaOH?
f) How much water should be added to 250 ml of 0.01 N NaOH to give 0.05N solution.

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