

T.Y.B.SC. SEM – V (2014 COURSE) : SUMMER - 2018
SUBJECT : CHEMISTRY: ANALYTICAL CHEMISTRY-V

Day : **Wednesday**
Date : **18/04/2018**

Time : **03.00 PM TO 05.00 PM**
Max. Marks : 40.

S-2018-0750

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

SECTION-I

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

- a) What is solubility and solubility product? Give two applications of solubility product in qualitative analysis.
- b) What is polarimeter? Explain the measurement of optical rotation of optically active substance by using polarimetry.
- c) Write a note on quinhydrone electrode.

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

- a) Explain the principle of thermal analysis with its classification.
- b) Write a principle of AAS and explain any one application of AAS.
- c) What are the conditions an ideal wash liquid should satisfy?

SECTION-II

Q.3 Attempt any **TWO** of the following: **(10)**

- a) List the advantages and disadvantages of potentiometric titration.
- b) Describe the thermogravimetric analysis with example in detail.
- c) Define the following terms:
 - (i) Spectral interference
 - (ii) Chemical interference
 - (iii) Hollow cathode lamp
 - (iv) Digestion
 - (v) Common ion effect.

Q.4 Attempt any **TWO** of the following: **(10)**

- a) A sample of fructose has a specific rotation of 45.20° . A solution shows angle of rotation as 13.20° with a tube of 10 cm length. What is the concentration of the compound in the unknown solution?
- b) The solubility of Ag_2CrO_4 is 0.028 gm per lit. at 25°C . Calculate its solubility product neglecting hydrolysis of chromate ion.
(Give mol wt. of $\text{Ag}_2\text{CrO}_4 = 332$).
- c) The solubility product of $\text{Mg}(\text{OH})_2$ is 1.16×10^{-11} at 25°C . Calculate the solubility of $\text{Mg}(\text{OH})_2$ in water in gms/ lit and in moles/ lit.

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