c) Define Capacity factor (K') in chromatography. 1

d) How would you determine the available iodine in iodized NaCl salt ? 2

3. a) Explain the role of Zimmermann-Reinhardt solution in permanganometry for the estimation of Fe^{3+} ions. 2

b) What are the basic steps that are followed by flame photometer to measure quantitatively the amount of 'Na' present in very dilute NaCl solution ? 2

c) Write down the steps for the determination of unknown concentration of dilute $K_2Cr_2O_7$ in water using spectrophotometer. What is molar absorptivity ? 2+2

Ex/FCH/I/XIV/34/2018(S)

FINAL B. SC. EXAMINATION, 2018

(1st Semester, Special Supplementary)

CHEMISTRY (HONOURS)

PAPER - XIV

ANALYTICAL CHEMISTRY

Time : Two hours Full Marks : 25

Answer ***all*** questions

1. a) Write down the Ilkövic equation. Mention the units of the different parameters involved in it. 1+2

b) What do you mean by $E_{1/2}$ in polarography ? Mention different features of $E_{1/2}$. 1+1

c) Mention the merits and demerits of DME as used in polarography. What will be the consequence, if the applied potential on DME exceeds –1·8 V versus SCE ? 3+1

d) Distinguish between Primary Coulometric Analysis and Secondary Coulometric Analysis. 1

2. a) What is ion-exchange chromatography ? How do you determine the ion exchange capacity of a cation exchange resin in the laboratory ? 1+2

b) How do you explain the apearance of blue colour due to slight excess of I_2 in presence of starch ? 1