**Q Bank for 2nd stage**

**1.** Oxidation states

How many oxidation state of iodine? Give an example for each of state

Oxidation states of the iodine are:

for example

(0) ) for example) I2)

(1-) for example KI

(1+) for example ICl

(3+) for example ICl3

(5+) for example KIO3

(7+) for example KIO4

Q **2.**  Prepare and balance the chemical reactions .

1-Sodium thiosulfate

Na2SO3 + S Ø Na2S2O3

S S2+ +2e- oxidation

2e- + S4+ S2+ reduction

Q **3.** /Determination of chromium percentage in potassium chromate.

Q **4.**  /What are differences between iodometry and iodimetry titration ?explain in detail.

Write the usages of sodium thiosulphate with chemical equations.

Q **5.**  Multiple Choice.

1- A 0.9182 g sample of KMnO4 (in neutral medium)is dissolved in enough water to give 500 ml of solution. What is normality in this solution?

a) 0.0459 eq\L (b) 0.2304 eq\L (c) 0.03487 eq \L (d) 0.01162 eq\L

2- For 3.2 gm of impure table salt, the mass of BaSO4 is equal to 1.5 gm the percentage of sulfate ion is?

a) 19.28% (b) 15.1 % (c) 7.8 % (d) 35.4 %

***:*** Write the chemical equations of preparation of the following salts, with balancing:

1. Potassium chromate.
2. Copper (I) iodide.
3. Sodium tri(oxalato)aluminate(III) trihydrate*.*

***Q2:*** ***(A)*** An experimental analysis, a sample of sodium thiosulfate (0.52 gm) was dissolved in water to prepare (50 ml), (1ml) of acetic acid was added to (10 ml, 0.085 N) of KI3 and titrated with prepared sodium thiosulfate, the volume that needed to reach end point by use the starch as indicator was (33.2 ml). Calculate the percent of purity Na2S2O3?

***(B)*** (1.8 gm) of divalent unknown (M) was dissolved in (45 ml) CuSO4 (2.7%) solution, during the experiment (0.0644 equivalent) of copper was precipitate. Calculate the equivalent weight of the unknown (M)?

***Q3:*** Select the true answer for the following: -

1. In the purification of table salt, the excess of Na2CO3 can be removed by addition of …..…...

(a)NaCl (B) HCl (C) NaOH

2. The equivalent weight of Zn is equal to (At.wt/n ) where (n) is equal to………

(a)Zero (B) +1 (C) +2

3. The double salt KCr(SO4)2.10 H2O ,will become very stable when the size of K+1 is ……… Cr+3

(a) equal to (B) greater than (C) smaller than

4. The oxidation stat of copper in potassium capprate is equal to ………

(a)+1 (B) +2 (C) +3

5……... Can be used to determination %Al in the complex Na3[Al(C2O4)3] 3H2O

(a)Iodometric titration (B) Back titration (C) Iodimetric titration