King Saud University Practical Med. Chem.

College of Pharmacy Date:

Pharm. Chem. Dept.

428 PHC

Practical Labs

**Lab no. 1:**

**Assay of Aspirin Tablet**

**I- Direct acid-base titration:**

 Dissolve a quantity of powdered aspirin equivalent to 0.2 gm in 10 ml ethanol. Add 3 drops of phenol red indicator and titrate with N/10 NaOH.

***Principle & Calc.:***

**II- Indirect acid-base titration:**

 To a quantity equivalent to 0.3 gm aspirin (one tablet) add 20 ml N/2 NaOH. Boil gently for 10 minutes. Cool and titrate with N/2 H2SO4 using phenol red as indicator.

***Principle & Calc.:***

**Lab no. 2:**

**Assay of Calcium Sandoz ampule & Vitamin C Tablet**

**I- Analysis of Sandoz Ample**

Each ampoule contains

 Rx

 Ascorbic acid 0.5 gm

 Calcium Gluconate 1.0 gm

 Transfer the content of one ampoule into a 250 ml volumetric flask, and complete to the mark with distilled water. Shake well (solution A).

***Assay of Vit. C content in the ampoule:***

**Iodimetric Method**

 Pipette 20 ml of solution A into a conical flask (G.S.C.F.), dilute with 20 ml distilled water and add 5 ml dil. H2SO4. Titrate with N/20 I2 using starch as indicator (add starch from the beginning of the titration).

***Principle and Calculation:***

***Assay of Calcium Gluconate content of the ampoule***

**EDTA Method:**

Transfer 10 ml of solution A to a conical flask, dilute with 20 ml distilled water and add 5 ml ammonia buffer. Titrate with M/100 EDTA using Eriochrome Black T (E.B.T).

***Principle & Calc.:***

**II- Assay of Ascorbic Acid Tablet**

Each tablet contains 500 mg of ascorbic acid.

**Andrew's Reaction**

6 C6H8O6 + 2 KIO3 6 C6H6O6 + 2 KI + 6 H2O

 (colorless)

5 KI + KIO3 + 6 HCl 3 I2 + 6 KCl + 3 H2O

 (brown)

KIO3 + 2 I2 + 6 HCl 5 ICl + KCl + 3 H2O

 (yellow)

*Net equation*

6 C6H8O6 + 3 KIO3  + 6 HCl 6 C6H6O6 + 3 ICl + 3 KCl + 9 H2O

**Procedure:**

Weigh and powder 20 tablets. Transfer a quantity of the powdered tablet equivalent to 0.15 gm ascorbic acid to a G.S.C.F. add 20 ml distilled water, 20 ml conc. HCl and 5 ml CHCl3 ( as indicator). Titrate with M/20 KIO3 till the violet color disappears from the chloroform layer.

***Calculation:***

**Lab No. 3**

**Analysis of Eye Drops**

Rx

 Zinc Sulphate

 Boric Acid

 Phenazone

**I-Assay of Zinc sulphate content by Compleximetry method:**

Transfer 10 ml of the sample to a conical flask, add 20 ml distilled water and 5 ml ammonia buffer. Titrate with M/100 EDTA using E.B.T. as indicator.

***Principle & Calc.:***

**II-Assay of Boric Acid by Acid-Base titration:**

Transfer 10 ml of the sample to a conical flask, add 20 ml distilled water and then add 20 ml neutral glycerol. Titrate with N/10 NaOH using ph.ph as indicator ( 8-10 drops).

***Principle & Calc.:***

**III-assay of Phenazone by Iodometry:**

Pipette 10 ml of the sample to a conical flask (G.S.C.F.). Add 10% sodium acetate and 25 ml of N/20 I2 . Allow to stand for 15 minutes with occasional shaking. Add 5 ml chloroform, shake gently to dissolve the precipitate then titrate with N/20 Na2S2O3 using starch as indicator.

***Principle & Calc.:***

**Lab No. 4**

**Assay of Rehydrate Solution**

Rx

 Sodium hydrogen carbonate

 Sodium Chloride

 Potassium Chloride

 Glucose

 Distilled water

**i) Assay for NaHCO3:**

 Transfere 10 ml of the sample into a conical flask. Add 20 ml distilled water. Titrate with N/10 H2SO4 using methyl orange (2-3 drops).

 ***Principle & Calc.:***

**ii) Assay for total halides (preciptimetry):**

**a) Mohr's method:**

 Transfere 10 ml of the sample into a G.S.C.F. Add the same amount of N/10 H2SO4 consumed in the first experiment. Boil for 5 minutes then cool. Add 0.5 ml K2CrO4. Titrate with N/10 AgNO3.

 ***Principle & Calc:.***

**b) Volhard's method:**

 Transfere 10 ml of the sample into a beaker. Add 10 ml dil. HNO3 then add 20 ml N/10 AgNO3. Filter into a G.S.C.F and wash the precipitate three times each with 10 ml distilled water. Add ferric Alum (1-2 ml) and titrate with N/10 NH4SCN.

***Principle & Calc. :***

**iii) Assay for Glucose:**

 Transfere 10 ml of the sample into a G.S.C.F . Add 25 ml N/10 I2. add 10% NaOH drop wize till the colour change to yellow. Allow to stand for 10 minutes. Acidify with dil. H2SO4. Titrate with N/10 Na2S2O3 using starch as indicator.

***Principle & Calc. :***

**Lab No. 5**

**Analysis of Scalp Mixture**

Rx

 Salicylic Acid

 Resorcinol

 Chloralhydrate

**Assay for Salicylic acid:**

 Transfere 10 ml of the sample into a conical flask. Add 20 ml distilled water. Titrate with N/10 NaOH using phenol red (2-3 drops).

 ***Principle & Calc.:***

**Assay for Chloral hydrate:**

 To the above neutral solution, add 25 ml N/1 NaOH. Allow to stand for 10 minutes and titrate with N/1 H2SO4.

***Principle & Calc:.***

**Assay for Salicylic acid & Resorcinol:**

Transfer 10 ml of the sample into 100 ml volumetric flask, complete to the volume with distilled water. Transfer 10 ml of this solution into G.S.C.F. Add 25 ml N/10 Br2 and 5 ml conc. HCl and allow to stand for 30 minutes then add 10 ml KI solution and 5 ml chloroform and titrate the liberated Iodine with N/10 Na2S2O3 using starch as an indicator.

A blank expirment must be carried out.

***Principle & Calc.:***

**Lab no. 6:**

 **Analysis of Eye Lotion Mixture**

Rx

 NaHCO3

 Boric Acid

 NaCl

 H2O

**I-Assay for NaHCO3:**

Transfere 10 ml of the sample into a conical flask., dilute with 20 ml distilled water. Titrate with N/10 H2SO4 using phenol red (1-2 drops). Boil to drive off CO2 (for about 5 minutes) then cool. Add 20 ml neutral glycerol and titrate with N/10 NaOH using ph.ph as indicator ( 10 drops).

***Principle & Calc.:***

**II-Assay for Sodium Chloride ( Mohr's Method):**

Transfer 10 ml of the sample into a G.S.C.F. , then add the same volume of N/10 H2SO4 consumed in the first experiment. Boil to drive off the CO2 then allow to cool. Dilute with 20 ml distilled water and titrate with N/10 AgNO3 using K2CrO4 as indicator (0.5-0.7 ml).

***Principle & Calc.:***