

**UNIVERSITY OF KERALA**  
**B.Sc. CHEMISTRY (CORE) IV SEMESTER**  
**LABORATORY COURSE (PRACTICAL) EXAMINATION, JULY 2012**  
**Course Code: CH 1442(Lab Course Number I)**  
**Inorganic Qualitative Analysis**

**TIME -3 HRS**

**WEIGHTAGE: 30**

ANSWER EITHER QUESTION NO. I OR II WHICHEVER IS MARKED AND PERFORM QUESTION NO. III.

*Important:* **NOTE DOWN THE TEST TUBE NUMBER IN YOUR ANSWER SHEET**

I.

- i) ----- ion can be confirmed by Nessler's reagent/Brown ring test/ Permanganic acid test/ Golden spangles test/Magneson reagent/
- ii) Flame test/Ash test imparts Crimson red/Blue/Brick red/Green/Pink/ Apple Green/Bright green colour for ----- ion
- iii) Oxalate/Phosphate/ Borate/ Fluoride ion is eliminated by -----
- iv) ----- ion is present in ----- group.

II.

- i) Lime water turns milky due to the formation of -----
- ii) Preparation of sodium carbonate extract converts ----- to soluble sodium salts
- iii) The group reagent/s used for ----- group is/are -----
- iv) ----- test/reagent is used to identify ----- ion

III. Adopting semi-micro techniques analyse systematically the given inorganic mixture to identify the two anions and two cations present in it. Systematically record the reactions, observations & inferences and report.

UNIVERSITY OF KERALA

IV SEMESTER B.Sc. (COMPLEMENTARY) CHEMISTRY LABORATORY COURSE (PRACTICAL)  
EXAMINATION FOR BOTANY, ZOOLOGY, HOME SCIENCE & BIOCHEMISTRY MAJORS JULY 2012

Course Code CH 1432.3 / CH1432 .4 / CH1432 .5 / CH1432 .6

TIME -3 HRS

WEIGHTAGE: 30

WRITE THE ANSWERS TO QUESTION NO I, II AND III IN THE FIRST TEN MINUTES IN A SEPARATE ANSWER SHEET

*Important:* NOTE DOWN THE TEST TUBE/BOTTLE NUMBER IN YOUR ANSWER SHEET

- I**
- Aromatic/aliphatic compounds burn with .....
  - ..... reagent is used to identify ..... functional group
  - The presence of -OH/-CHO/-CO/-COOH/-NH<sub>2</sub>/-CONH<sub>2</sub>/-COOCH<sub>3</sub> group in an aromatic compound is identified by ..... reaction.
  - Write the confirmatory test for the presence of -OH/-CHO/-CO/-COOH/-NH<sub>2</sub>/-CONH<sub>2</sub>-COOCH<sub>3</sub> group in an aromatic compound.

**II**

- Equivalent weight of NaOH / K<sub>2</sub>CO<sub>3</sub>/ HCl/ HNO<sub>3</sub>/Na<sub>2</sub>CO<sub>3</sub>/ H<sub>2</sub>SO<sub>4</sub> /FeSO<sub>4</sub>.7H<sub>2</sub>O/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>.2H<sub>2</sub>O / Mohr's salt/K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>/ is .....
- The mass of Na<sub>2</sub>CO<sub>3</sub>/ FeSO<sub>4</sub>.7H<sub>2</sub>O/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>.2H<sub>2</sub>O / Mohr's salt required to prepare 100/250 ml, 0.1 molar solution is.....
- Name an indicator used for the titration between solutions of NaOH / K<sub>2</sub>CO<sub>3</sub>/ HCl/ HNO<sub>3</sub>/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>/ and NaOH / Na<sub>2</sub>CO<sub>3</sub>/ HCl/ HNO<sub>3</sub>/ H<sub>2</sub>SO<sub>4</sub>/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>
- Name an intermediate solution used for the estimation of NaOH / K<sub>2</sub>CO<sub>3</sub>/ HCl/ HNO<sub>3</sub>/ FeSO<sub>4</sub>/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>/ Mohr's salt when crystals of Na<sub>2</sub>CO<sub>3</sub>/ FeSO<sub>4</sub>.7H<sub>2</sub>O/ H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>.2H<sub>2</sub>O / Mohr's salt is given.

**III** Write a brief outline of the procedure you would adopt for estimating volumetrically the mass of.....in the whole of the given solution, being provided with pure.....

**IV** Estimate volumetrically the mass of ..... in the whole of the given solution. You are provided with pure..... and approximately 0.1 N ..... solution.

**V** Systematically analyse the given organic compound and identify the functional group.

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**B.Sc. (COMPLEMENTARY) IV SEMESTER CHEMISTRY LABORATORY COURSE  
(PRACTICAL) EXAMINATION FOR PHYSICS & GEOLOGY MAJORS, JULY 2012  
Course Code CH 1432.1 / CH1432 .2**

**TIME -3 HRS**

**WEIGHTAGE: 30**

WRITE THE ANSWERS TO QUESTION NO I, II AND III IN THE FIRST TEN MINUTES IN A SEPARATE ANSWER SHEET

*Important: NOTE DOWN THE TEST TUBE/BOTTLE NUMBER IN YOUR ANSWER SHEET*

- I** i) ..... cation belongs to ..... analytical group.  
ii) Name the group reagent/s for ..... group?  
iii) Give one identification test for the above cation  
iv) Flame test/Ash test imparts Crimson red/Brick red/Apple green/blue/green/pink colour for ..... ion
- II** i) Equivalent weight of NaOH /  $K_2CO_3$ / HCl/  $HNO_3$ / $Na_2CO_3$ /  $H_2SO_4$  / $FeSO_4 \cdot 7H_2O$ / $H_2C_2O_4 \cdot 2H_2O$  / Mohr's salt/ $K_2Cr_2O_7$ / is .....  
ii) The mass of  $Na_2CO_3$ /  $FeSO_4 \cdot 7H_2O$ /  $H_2C_2O_4 \cdot 2H_2O$  / Mohr's salt required to prepare 100/250 ml, 0.1 molar solution is.....  
iii) Name an indicator used for the titration between solutions of NaOH /  $K_2CO_3$ / HCl/  $HNO_3$ / $H_2C_2O_4$ / and NaOH /  $Na_2CO_3$ / HCl/  $HNO_3$ /  $H_2SO_4$ /  $H_2C_2O_4$   
iv) Name an intermediate solution used for the estimation of NaOH /  $K_2CO_3$ / HCl/  $HNO_3$ / $FeSO_4$ /  $H_2C_2O_4$ / Mohr's salt when crystals of  $Na_2CO_3$ /  $FeSO_4 \cdot 7H_2O$ /  $H_2C_2O_4 \cdot 2H_2O$  / Mohr's salt is given.
- III** Write a brief outline of the procedure you would adopt for estimating volumetrically the mass of.....in the whole of the given solution, being provided with pure.....
- IV** Estimate volumetrically the mass of ..... in the whole of the given solution. You are provided with pure..... and approximately 0.1 N ..... solution.
- V** Identify and confirm the two cations in the given solution by systematic analysis