UNIVERSITY OF KERALA

IV SEMESTER B.Sc. CHEMISTRY (CORE) LABORATORY COURSE (PRACTICAL) EXAMINATION FOR CHEMISTRY MAJOR, JULY 2012

TIME -3 HRS
WEIGTAGE: 30

a. Components for End Semester Evaluation: Inorganic Qualitative Analysis (weightage 24)

Sl.No.	Component	Grade awarded	*Grade point	Weightage	#Weighted Grade point
I	ANSWER TO THE QUESTION	All four correct : A Only three : B Only two : C Only one : D None : E		1	
II	**Preliminary experiments** 1. Colour and appearance 2. Solubility/Action of heat 3. Flame test 4. Action with NaOH	All four : A Only three : B Only two : C Only one : D None : E		1	
III	**Preliminary tests for anions** 1. Action with dil.HCl 2. Action with con.H_2SO_4 3. Action with H_2SO_4 & MnO_2 4. Action with H_2SO_4 & paper ball 5. Ethyl Borate test 6. Ethyl acetate test 7. Ammonium molybdate test 8. NaOH & Al powder	Seven or eight : A Five or six : B Three or Four : C One or Two: D None : E		2	
IV	**Systematic tests for anions** 1. Preparation of sodium carbonate extract 2. Dil. HNO_3 + $AgNO_3$ 3. Dil. HCl + $BaCl_2$ 4. Dil. HCl + Zirconyl Nitrate 5. Dil.CH_3COOH + $CaCl_2$ 6. $FeCl_3$ test 7. Brown ring test 8. Systematic recording	Seven or eight : A Five or six : B Three or Four : C One or Two: D None : E		3	
V	1. Confirmatory test of 1st anion 2. Correct identification of 1st anion 3. Confirmatory test of 2nd anion 4. Correct identification of 2nd anion	All four correct : A Only three : B Only two : C Only one : D None : E		5	
VI	1. Intergroup separation with systematic recordings 2. Elimination of interfering anion/intragroup separation 3. Group identification for cation I 4. Group identification for cation II	All four correct : A Only three : B Only two : C Only one : D None : E		4	

VII	Two CORRECT tests (Test reagents + observation + inference) for 1st cation Two CORRECT tests (Test reagents + observation + inference) for 2nd cation	All four correct : A Only three : B Only two : C Only one : D None : E		8	

b. Sub-Components for Lab report (weightage 6)

	LAB REPORT	**Grade awarded**	***Grade point**	**Weightage**	**#Weighted Grade point**
I	No. Experiments Qualitative analysis : 8 mixtures	Eight– A Grade Six – B Grade, four –C Grade, two – D grade		4	
II	Reactions of ions with equations, Spot test, Correct recording and Neatness	All four : A Only three : B Only two : C Only one : D		1	
III	Inorganic Preparations	Six – A Grade Five – B Grade Four – C Grade <Three – D grade None – E Grade		1	
Total Weighted Grade point for Lab Report			**b**		

***Grade point : A=4, B=3, C=2, D=1**

#Weighted Grade point = Grade Point x weightage

$$* \, GRADE\ POINT\ EARNED = \frac{\text{Weighted Grade point of a + b}}{30} =$$

GRADE =

Range	3.5-4.0	2.5-3.49	1.5-2.49	0.5-1.49	0.0-0.49
Grade	A	B	C	D	E

UNIVERSITY OF KERALA

IV SEMESTER B.Sc. (COMPLEMENTARY) CHEMISTRY LABORATORY COURSE (PRACTICAL) EXAMINATION FOR PHYSICS & GEOLOGY MAJORS, JULY 2012

SCHEME OF VALUATION

TIME -3 HRS WEIGTAGE: 30

c. Components for End Semester Evaluation of Inorganic Qualitative Analysis (weightage 12)

Sl.No.	Component	Grade awarded	*Grade point	Weightage	#Weighted Grade point
I	ANSWER TO THE QUESTION	All four correct : A Only three : B Only two : C Only one : D None : E		1	
II	Preliminary experiments + group reagents + systematic recording of cations + Lab skill	All four : A Only three : B Only two : C Only one : D None : E		2	
III	1.Correct group of 1^{st} cation 2.Correct group of 2^{nd} cation 3.Correct identification of 1^{st} cation 4. Correct identification of 2^{nd} cation	All four correct : A Only three : B Only two : C Only one : D None : E		3	
IV	Two CORRECT tests (Test reagents + observation + inference) for 1^{st} cation Two CORRECT tests (Test reagents + observation + inference) for 2^{nd} cation	All four correct : A Only three : B Only two : C Only one : D None : E		6	
Total Weighted Grade point for A. Inorganic Qualitative Analysis				**a**	

d. Components for End Semester Evaluation of Inorganic Quantitative Analysis(weightage 12)

Sl.No.	Component	Grade awarded	*Grade point	Weightage	#Weighted Grade point
I	ANSWER TO THE QUESTION	All four correct : A Only three : B Only two : C Only one : D None : E		1	

II	PROCEDURE 1. Preparation of standard solution 2. Correct intermediate 3. Standardization of intermediate 4. Indicator and end point 5. Making up of given solution 6. Titration of made up solution 7. Indicator and end point 8. Any other relevant points	Seven or Eight points– A Grade Five or Six points – B Grade, Three or four points – C Grade, One or two points – D grade		1	
III	STANDARDISATION				
a	Tabulation, Lab skill, Calculation AND Neatness	All four : A Only three : B Only two : C Only one : D		2	
b	Accuracy of the result	Upto 1.5% error A Between 1.51 – 2.5% B Between 2.51 – 3.5% C Greater than 3.5% D		3	
IV	ESTIMATION				
a	Tabulation, Lab skill, Calculation AND Neatness	All four : A Only three : B Only two : C Only one : D		2	
b	Accuracy of the result	Upto 1.5% error A Between 1.51 – 2.5% B Between 2.51 – 3.5% C Greater than 3.5% D		3	
Total Weighted Grade point for B. Inorganic Quantitative Analysis				**b**	

e. Sub-Components for Lab report (weightage 6)

	LAB REPORT	**Grade awarded**	**Grade point**	***Weightage**	**#Weighted Grade point**
I	No. Experiments Qualitative analysis : 8 cation mixtures	Eight– A Grade Six – B Grade, four –C Grade, two – D grade		2	
II	Quantitative analysis : 10 experiments (both volumetric and gravimetric)	Ten – A Grade Six – B Grade, four –C Grade, two – D grade		3	
III	Reactions of cations, Chemistry, Correct recording and Neatness			1	
Total Weighted Grade point for C. Lab Report				**c**	

***Grade point : A=4, B=3, C=2, D=1**

#Weighted Grade point = Grade Point x weightage

$$* \textit{GRADE POINT EARNED} = \frac{\text{Weighted Grade point of a + b+ c}}{30} =$$

GRADE =

Range	3.5-4.0	2.5-3.49	1.5-2.49	0.5-1.49	0.0-0.49
Grade	A	B	C	D	E

UNIVERSITY OF KERALA

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

SCHEME OF VALUATION

TIME -3 HRS **WEIGTAGE: 30**

f. Components for End Semester Evaluation of Organic Qualitative Analysis (weightage 12)

Sl.No.	Component	Grade awarded	Grade point	Weightage	Weighted Grade point
I	ANSWER TO THE QUESTION	All four correct : A Only three : B Only two : C Only one : D None : E		1	
II	Two preliminary experiments Na fusion extract preparation Test for elements N / halogens	All four correct : A Only three : B Only two : C Only one : D None : E		3	
III	Two tests each for Aromatic/aliphatic & saturated/unsaturated	All four : A Only three : B Only two : C Only one : D None : E		2	
IV	Systematic analysis Identification test - functional group Confirmation test functional group Neat tabulation & Lab skill	All four correct : A Only three : B Only two : C Only one : D None : E		6	
Total Weighted Grade point for Organic Qualitative Analysis				**a**	

g. Components for End Semester Evaluation of Inorganic Quantitative Analysis(weightage 12)

Sl.No.	Component	Grade awarded	Grade point	Weightage	Weighted Grade point
I	ANSWER TO THE QUESTION	All four correct : A Only three : B Only two : C Only one : D None : E		1	

II	PROCEDURE 9. Correct intermediate 10. Preparation of standard solution 11. Standardization of intermediate 12. Indicator and end point 13. Making up of given solution 14. Titration of made up solution 15. Indicator and end point 16. Any other relevant points	Seven or Eight points– A Grade Five or Six points – B Grade, Three or four points – C Grade, One or two points – D grade		1	
III	STANDARDISATION				
a	Tabulation, Lab skill, Calculation AND Neatness	All four : A Only three : B Only two : C Only one : D		2	
b	Accuracy of the result	Up to 1.5% error A Between 1.51 – 2.5% B Between 2.51 – 3.5% C Greater than 3.5% D		3	
IV	ESTIMATION				
a	Tabulation, Lab skill, Calculation AND Neatness	All four : A Only three : B Only two : C Only one : D		2	
b	Accuracy of the result	Up to 1.5% error A Between 1.51 – 2.5% B Between 2.51 – 3.5% C Greater than 3.5% D		3	
Total Weighted Grade point for Inorganic Quantitative Analysis				**b**	

h. Sub-Components for Lab report (weightage 6)

	LAB REPORT	**Grade awarded**	***Grade point**	**Weightage**	**#Weighted Grade point**
I	No. Experiments Qualitative analysis : 8 Organic compounds	Eight– A Grade Six – B Grade, four –C Grade, two – D grade		2	
II	Quantitative analysis : 10 experiments (both volumetric and gravimetric)	Ten – A Grade Six – B Grade, four –C Grade, two – D grade		3	
III	Neatness			1	
Total Weighted Grade point for Lab Report				**c**	

***Grade point : A=4, B=3, C=2, D=1**

#Weighted Grade point = Grade Point x weightage

$$GRADE\ POINTS\ EARNED = \frac{\text{Total Weighted Grade points (a + b+ c)}}{30} =$$

Range	3.5-4.0	2.5-3.49	1.5-2.49	0.5-1.49	0.0-0.49
Grade	A	B	C	D	E

GRADE =