Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name : Analytical Chemistry

Subject Code : 5SC01ACC4 **Branch: M.Sc. (Chemistry)**

Semester : 1 **Date :07/12/15** **Time : 10:30 To1:30** **Marks : 70**

Instructions:

(1) Use of Programmable calculator and any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

SECTION – I

Q-1 **Attempt the Following questions** **(07)**

a.	Define: Nephelometry	**1**
b.	Define: Turbidimetry	**1**
c.	Define: fluorescence	**1**
d.	Define: Phosphorence	**1**
e.	Define: Reflection	**1**
f.	Define: Scattering	**1**
g.	Write the names of food preservatives.	**1**

Q-2 **Attempt all questions** **(14)**

A	How will you analyze crude protein concentration in food by khjeldal method ? Discuss with its principle.	**7**
B	What is ash ? How will you analyze it from food sample ?	**7**

OR

Q-2 **Attempt all questions** **(14)**

A	Write the overview of the analytical chemistry and Traditional analytical techniques.	**7**
B	What are the limitations of flame photometry? Discuss quantitative analysis by internal standard addition method.	**7**

Q-3 **Attempt all questions** **(14)**

A	Compare the fluorimetry and phosphorimetry with absorption method using energy level diagram.	**7**
B	Draw the schematic diagram of turbidimeter. Briefly discuss the factors affecting in measurement.	**7**

OR

Q-3		**Attempt all questions**	**(14)**
	A	How will you analyse nitrite and nitrate as preservative in food sample ?	**7**
	B	Classify the spices and condiments. How will you analyse crude fiber in turmeric powder ?	**7**

SECTION – II

Q-4		**Define the following terms:**	**(07)**
	a.	Hydroxyl value	**1**
	b.	Acid value	**1**
	c.	Oil	**1**
	d.	Accuracy	**1**
	e.	Sensitivity	**1**
	f.	Detection limit	**1**
	g.	Precision	**1**

Q-5		**Attempt all questions**	**(14)**
	A	Discuss the reactions involved in photolytic cycle and photochemical smog.	**7**
	B	Give the analytical profile of oils and fats. How will you determine iodine value ?	**7**

OR

Q-5		**Attempt all questions**	**(14)**
	A	Write the different branches of forensic science with its examples.	**7**
	B	Cu^{+2} was obtained with a chelating agent. The fluorescing chelate gave a slope of 15 intensity units per 1.0 mg/liter of Cu^{+2} and interrupted the origin. Calculate the Cu^{+2} concentration in the system which gave an intensity reading of 90.	**7**

Q-6		**Attempt all questions**	**(14)**
	A	Write the recent trends in analytical chemistry driven by performance and cost.	**7**
	B	Discuss the quantitative analysis by internal standard method.	**7**

OR

Q-6		**Attempt all Questions**	**(14)**
	A	Cu^{+2} was combined with a chelating agent. The fluorescing chelate gave a slope of 15 intensity units per 1.2 mg liter of Cu^{+2} concentration in the system which gave an intensity reading of 85.	**7**
	B	Discuss chemistry of photochemical smog in detail and its importance.	**7**