C.U.SHAH UNIVERSITY
Summer Examination-2016

Subject Name: Analytical Chemistry

Subject Code: 5SC02CHC4   **Branch: M.Sc.(Chemistry)**

Semester: 2   **Date: 11/05/2016**   **Time: 10:30 To 01:30**   **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.	What is called sustainable chemistry?	1
	b.	Which university has establish the green chemistry network in United Kingdom at the beginning of green chemistry appraoch ?	1
	c.	Who has published the set of principles to guide the practice of green chemistry ?	1
	d.	According to green chemistry principal # 2; $2NH_3 + H_2O_2 \rightarrow$???? $+ 2H_2O$	1
	e.	Give the full form of TDS parameter from water analysis.	1
	f.	Give the full form of BOD parameter from water analysis.	1
	g.	Give the full form of COD parameter from water analysis	1

Q-2		**Attempt all questions**	**(14)**
	A	Write the 12 principles of green chemistry	7
	B	Explain in brief: the recent trends in green chemistry approach.	7

OR

Q-2		**Attempt all questions**	**(14)**
	A	Write the concept of green chemistry.	7
	B	Write a short-note on hydrazine according to green chemistry approach.	7

Q-3		**Attempt all questions**	**(14)**
	A	Write a short-note on lactide according to green chemistry approach.	7
	B	Explain different type of classification of environmental chemistry.	7

OR

Q-3		**Attempt all questions**	**(14)**
	A	Explain the synthetic techniques according to green chemistry.	7

B   Explain the Carbon dioxide as blowing agent according to green chemistry.   7

SECTION – II

Q-4   **Attempt the Following questions**   **(07)**
   a.   Define: accuracy.   1
   b.   Define: precision.   1
   c.   Give the names of various types of errors.   1
   d.   Define: confidence interval.   1
   e.   Give the full form of CETP.   1
   f.   Give the names of any two preservatives for polluted water.   1
   g.   Give the full form of DO parameter from water analysis.   1

Q-5   **Attempt all questions**   **(14)**
   A   Each of the following sets of data has what appears to be an outlaying result. Apply the Q test (90 % confidence) to determine whether this value should be retained or rejected. For C and E (Q_{tab} = 0.94), A, B, D and F (Q_{tab} = 0.76).   7

A	B	C	D	E	F
75.97	14.64	31.42	31.42	9.22	9.22
76.36	14.41	31.40	31.40	9.06	9.06
76.04	14.46	31.04	31.04	9.20	9.20
76.13	14.14		31.44		9.24

   B   Explain determinant and indeterminant errors.   7

OR

Q-5   **Attempt all questions**   **(14)**
   A   Explain methods for minimization of errors.   7
   B   Given the following set of weights 29.8, 30.2, 28.6 and 29.7 mg. Calculate the average deviation and the standard deviation of the individual values and the average deviation and the standard deviation of the mean. Express these as absolute and relative values.   7

$\overline{\chi_i}$	$\chi_i - \overline{\chi}$	$(\chi_i - \overline{\chi})^2$
29.8	0.2	0.04
30.2	0.6	0.36
28.6	1.0	1.00
29.7	0.1	0.01
$\sum 118.3$	$\sum 1.9$	$\sum 1.41$

Q-6   **Attempt all questions**   **(14)**
   A   Write a note on photochemical smog chemistry   7
   B   Write a note on photolytic cycle and importance of particulates.   7

OR

Q-6   **Attempt all Questions**   **(14)**
   A   Describe the principal of water analysis and at least 2 examples of its parameters.   7
   B   Write a short note on energy balance between earth-atmospheric systems.   7