Enrollment No: _	Exam Seat No:
	C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Physical Chemistry - I

Subject Code: 4SC05CHC3 Branch: B.Sc(Chemistry)

Semester: 5 Date: 27/04/2016 Time: 02:30 To 05:30 Marks: 70

Instructions:

- (1) Use of Programmable calculator & 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.

Q-1		Attempt the following questions:	(14)
	a)	Define cyclic process	(1)
	b)	Define fugacity	(1)
	c)	Define mole fraction	(1)
	d)	Write the statement for daltons law of partial pressure	(1)
	e)	Define component	(1)
	f)	Draw phase diagram for water system	(1)
	g)	Define eutectic point	(1)
	h)	Define colloid	(1)
	i)	What are lyophobic sols?	(1)
	$\mathbf{j})$	Define gold number	(1)
	k)	What is liquid junction potential?	(1)
	1)	Define concentration cell	(1)
	m)	Write any one statement of second law of thermodynamics	(1)
	n)	Define non ideal solution	(1)
Atten	npt any f	our questions from Q-2 to Q-8	
Q-2		Attempt all questions	(14)
	a.	Derive relation for entropy from Carnot's cycle	(7)
	b.	Derive Gibbs Helmholtz equations	(7)
Q-3		Attempt all questions	(14)
	a.	At what temperature water will boil under the pressure of 787 mm? The latent heat of vaporization is 563 cal per gram. (R=1.987 cal)	(4)
	b.	Derive entropy change for an Ideal Gas	(10)
Q-4		Attempt all questions	(14)
-	a.	Explain Phenol-Water partially miscible system.	(5)
	b.	Explain theory of fractional distillation	(5)
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	c.	Discuss Henrys law and also discuss its limitations.	(4)
Q-5		Attempt all questions	(14)
χ.	a.	Write a note on Phase	(4)
	b.	Explain sulphur system	(5)
	c.	Discuss Zinc-Cadmium two component system	(5)
Q-6		Attempt all questions	(14)
_	a.	Explain dispersion methods for preparation of sols	(7)
	b.	Discuss optical and kinetic properties of sol	(7)
Q-7		Attempt all questions	(14)
•	a.	Explain methods to eliminate liquid junction potential	(7)
	b.	Explain electrode concentration cell.	(7)
Q-8		Attempt all questions	(14)
-	a.	Write the characteristics of lyophobic and lyophilic colloids	(7)
	b.	Explain Vant Hoff Isotherm.	(7)