C.U.SHAH UNIVERSITY
Winter Examination-2015

Subject Name: Pharmaceutical Chemistry-II (Physical)

Subject Code: 4PS01PCH2   **Branch: B.Pharm**

Semester: 1   Date: 7/12/2015   Time:10:30 To 1:30   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)	Write the First law of thermodynamics.	1
	b)	Define order of reaction.	1
	c)	Define activation energy.	1
	d)	Write the unit of second order rate constant.	1
	e)	Define photochemistry.	1
	f)	Define the term adsorption.	1
	g)	State Raoult's law.	1
	h)	Define dipole moment.	1
	i)	Name two factors affecting viscosity.	1
	j)	Write the unit used for surface tension.	1
	k)	Define molecularity of a reaction.	1
	l)	Define half life period.	1
	m)	Write the expression for half life of a first order reaction.	1
	n)	Name two methods for determination of order of a reaction.	1

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	**(14)**
	A	Derive integrated rate equation for first order reaction.	**7**
	B	Explain Jablonski diagram with suitable illustrations.	**7**
Q-3		**Attempt all questions**	**(14)**
	A	Explain Beer-Lambert's law along with its limitations.	**7**
	B	What are adsorption isotherms? Explain Freundlich and Langmuir isotherms in detail.	**7**
Q-4		**Attempt all questions**	**(14)**
	A	Write a note on carnot cycle.	**7**
	B	Define thermodynamics. Explain first law of thermodynamics.	**7**

Q-5		**Attempt all questions**	**(14)**
	A	What are colligative properties? Explain any one property with its method.	**7**
	B	Write in detail about enzyme catalysis.	**7**

Q-6		**Attempt all questions**	**(14)**
	A	Discuss various methods of surface tension determination.	**7**
	B	Write the differences between Physical adsorption and Chemical adsorption.	**7**

Q-7		**Attempt all questions**	**(14)**
	A	What is refractive index? Write its importance in pharmacy and enlist the factors affecting it.	**7**
	B	What is viscosity? How it is measured experimentally? Enlist the factors affecting it.	**7**

Q-8		**Attempt all questions**	**(14)**
	A	Explain Debye-Huckel theory of strong electrolytes.	**7**
	B	Differentiate between molecularity and order of a reaction. Explain why high molecularity reactions are very rare?	**7**