C.U.SHAH UNIVERSITY
Summer Examination-2017

Subject Name: Pharmaceutical Chemistry – II (Physical)

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

Semester: 1   **Date: 28/03/2017**   **Time: 10:30 To 01:30**   **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		**Define the following terms.**	
	a)	Surface tension.	1
	b)	Dipole moment.	1
	c)	Osmotic pressure.	1
	d)	Adiabatic process.	1
	e)	Triple point.	1
	f)	Desorption.	1
	g)	Half life.	1
	h)	Molal elevation constant.	1
	i)	Three component system.	1
	j)	Faraday's second law of electrolysis.	1
	k)	Molar conductance.	1
	l)	Optical rotation.	1
	m)	Viscosity.	1
	n)	Colligative properties.	1

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

Q-2		**Attempt all questions**	
	a)	Describe the determination of surface tension by drop count method.	**7**
	b)	Write various the factors affecting viscosity.	**7**
Q-3		**Attempt all questions**	
	a)	Describe the methods to determine optical rotation.	**7**
	b)	Describe Carnot cycle.	**7**
Q-4		**Attempt all questions**	
	a)	Derive $C_p – C_v = R$.	**7**
	b)	Write and explain the laws of thermodynamics.	**7**
Q-5		**Attempt all questions**	
	a)	What is Raoult's law? Describe the equation for molecular weight determination of non-volatile solute by Raoult's law.	**7**

b)	Describe the elevation of boiling point as a Colligative property.	**7**

Q-6 **Attempt all questions**

a) What is Parachor? Describe the importance of Parachor in determination of molecular mass with example. **7**

b) Draw the phase diagram for water, ice and vapour (three component systems) and describe in detail. **7**

Q-7 **Attempt all questions**

a) Describe the Jablonski diagram. **7**

b) Write any three theories of reaction kinetics. **7**

Q-8 **Attempt all questions**

a) Describe Langmuir theory of adsorption and describe applications of adsorption. **10**

b) Enlist and explain colligative properties in detail. **4**