# C.U.SHAH UNIVERSITY
## Summer-2015

Subject Code: 4PS01PCH2       Subject Name: Pharmaceutical Chemistry-II (Physical)
Course Name: B.Pharm                                    Date: 6/5/2015
Semester:I                                                        Marks: 70
                                                                  Time:10:30 TO 01:30

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**Instructions:**
1) Attempt all Questions of both sections in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

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**Q-1        A)  Define the following:**
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**

**B)  Answer the followings in one or two sentences**
a)  Molar elevation constant                                            **1**
b)  Give an example of three component system.                          **1**
  c)  Faraday's second law of electrolysis                              **1**
d)  Molar conductance                                                   **1**
e)  Optical rotation.                                                    **1**
f)  Viscosity                                                           **1**
g)  What are colligative properties?                                     **1**

**Attempt any four**

**Q-2        Give answer of following.**
a) Describe the determination of surface tension by drop count           **5**
   method.
b) Write the factors affecting viscocity.                                **5**
c) Describe the methods to determine optical rotation.                   **4**

**Q-3        Give answer of following.**
a) Describe Carnot cycle.                                               **5**
b) Derive $C_p - C_v = R$                                               **5**
c) Write the laws of thermodynamics.                                    **4**

6-5

**Q-4**     **Give answer of following.**
    a) What is Raoult's law? Describe the equation for molecular weight    **7**
       determination of non-volatile solute by Raoult's law.
    b) Describe the elevation of boiling point as a colligative property.    **7**

**Q-5**     **Give answer of following.**
    a) Write the Faraday's laws of electrolysis.    **5**
    b) Derive Nernst equation.    **5**
    c) Write about Debye-Huckel theory.    **4**

**Q-6**     **Give answer of following.**
    a) Draw the phase diagram for water, ice and vapour (three component    **7**
       system) and describe in detail.
    b) What is parachor? Describe the importance of parachor in    **7**
       determination of molecular mass with example.

**Q-7**     **Give answer of following.**
    a) Describe Langmuir theory of adsorption.    **5**
    b) Describe the application of adsorption.    **5**
    c) Differentiate physical adsorption and chemical adsorption.    **4**

**Q-8**     **Give answer of following.**
    a) Describe the Jablonski diagram    **7**
    b) Write any three theories of reaction kinetics.    **7**

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