# C.U.SHAH UNIVERSITY
## Winter Examination-2015

**Subject Name :** Physical Pharmacy II

**Subject Code :** 4PS04PHP2                    **Branch :** Pharmaceutical Sciences

**Semester :** 4          **Date :__19__/__11__/_2015_____Time :2:30To5:30Marks :** 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)**
                 (MCQ/Short Type of Questions=1 mark*14=14 marks)
   **a)** Define the term "Surface Diameter".
   **b)** Define the term "Stoke's Diameter".
   **c)** Define the term "Angle of Repose".
   **d)** Define the term "Plug Flow".
   **e)** Define the term "Hausner's Ratio".
   **f)** Define the term "Carr's Index".
   **g)** Define the term "Negative Thixotropy".
   **h)** Define the term "Bluges and Spurs".
   **i)** Define the term "Order of Reactions".
   **j)** Define the term "Rate of Reactions".
   **k)** Define the term "Kinematic Viscosity".
   **l)** Define the term "Fluidity".
   **m)** Define the term "Porosity".
   **n)** Define the term "Compaction".

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

**Q-2**          **Attempt all questions**                                                      **(14)**
   **1.** Describe coulter-counter method with labelled diagram.                               **(5)**
   **2.** Describe Andreasen pipette method with labelled diagram.                             **(5)**
   **3.** Describe the methods for determining the surface area.                               **(4)**
**Q-3**          **Attempt all questions**                                                      **(14)**
   **1.** Explain the any one single point viscometer.                                         **(5)**
   **2.** Explain the Dilatant flow with example.                                              **(5)**
   **3.** Discuss the methods of measurement of "Thixotropy".                                  **(4)**

| Q-4 | | **Attempt all questions** | **(14)** |
|---|---|---|---|
| | **1.** | Give examples of reaction, which follows pseudo zero order. | **(5)** |
| | **2.** | Describe any one viscometer which finds out viscosity of Non-Newtonian fluids. | **(5)** |
| | **3.** | A plastic material was found to have a yield value of 5200 dynes cm$^{-2}$ .At shearing stresses above the yield value, F was found to increase linearly with G. If the rate of shear was 150 sec$^{-1}$ when F was 8000 dyne cm$^{-2}$, calculate U, the plastic viscosity of the sample. | **(4)** |
| Q-5 | | **Attempt all questions** | **(14)** |
| | **1.** | Discuss the factors affecting on powder flow. | **(7)** |
| | **2.** | Draw a graph & explain the nature for a first order reaction. | **(7)** |
| Q-6 | | **Attempt all questions** | **(14)** |
| | **1.** | Explain the accelerated stability studies | **(7)** |
| | **2.** | Enumerate and Describe various methods to determine the order of reaction. | **(7)** |
| Q-7 | | **Attempt all questions** | **(14)** |
| | **1.** | Discuss the "Chelates". | **(5)** |
| | **2.** | Explain kinetic of protein binding. | **(5)** |
| | **3.** | Describe Analysis method for drug-protein binding. | **(4)** |
| Q-8 | | **Attempt all questions** | **(14)** |
| | **1.** | Explain the role of polymer in drug delivery systems. | **(5)** |
| | **2.** | Explain the molecular weight determination from solution viscosity. | **(5)** |
| | **3.** | Discuss the synthetic polymers used in pharmacy. | **(4)** |