

Total No. of Questions : 6]

SEAT No. :

P3155

[Total No. of Pages : 2

[5245]-401

Second Year B. Pharmacy (Semester - IV)

PHYSICAL PHARMACEUTICS - II

(2013 Pattern)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Answers to the two sections should be written in separate answer books.*
- 3) Neat diagram must be drawn wherever necessary.*
- 4) Figures to the right indicate full marks.*

SECTION - I

Q1) Classify and explain in detail Newtonian and Non Newtonian systems. Add a note on thixotropy. **[10]**

OR

Define and classify different orders of reaction with the equations. Add a note on methods to determine order of a reaction. **[10]**

Q2) Attempt any five of the following: **[15]**

- i) State Arrhenius equation and define energy of activation.
- ii) How will you prevent hydrolysis of a pharmaceutical product?
- iii) Explain Langmuir's adsorption isotherm.
- iv) Write about physical instabilities in different formulations.
- v) Explain mechanism of detergency.
- vi) Explain working of capillary viscometers.
- vii) Enlist applications of surfactants.

Q3) Write notes on any two of the following: **[10]**

- i) Micellar solubilization
- ii) Factors affecting stability of pharmaceuticals
- iii) Spreading coefficient
- iv) Thixotropy

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SECTION - II

Q4) Define colloids. Write an account of optical, kinetic and electrical properties of colloids. **[10]**

OR

Enumerate the various derived properties of powder. How can these be determined? **[10]**

Q5) Attempt any five of the following. **[15]**

- i) What is Nernst and Zeta potential? Give its importance in the field of pharmacy.
- ii) Explain Andreason Pipette method to determine particle size.
- iii) Justify factors affecting flow of powders.
- iv) Define: Angle of repose, Porosity and Granule density.
- v) Explain Hofmeister series.
- vi) Give pharmaceutical applications of colloids.
- vii) Explain the concept of Donnan-membrane equilibrium with its role in pharmacy.

Q6) Write short notes on any two of the following: **[10]**

- i) Specific surface and its determination.
- ii) Stabilization of colloidal system.
- iii) Particle volume measurement.
- iv) Protective colloids.

