

**B. PHARM.  
FOURTH SEMESTER  
PHYSICAL PHARMACEUTICS - II  
BP403T**

(USE SEPARATE ANSWER SCRIPTS FOR OBJECTIVE & DESCRIPTIVE)

Duration: 3 hrs.

Full Marks: 75

[ PART-A: Objective ]

Time: 20 min.

Marks: 20

*Choose the correct answer from the following:*

*1×20=20*

- Reduced viscosity is the ratio of the specific viscosity to the \_\_\_\_\_.
  - Weight of liquid.
  - Density of liquid
  - Unit time
  - Concentration of liquid
- The unit for the specific rate constant for a second order reaction are:
  - Liter/moles. sec
  - Liter. sec/moles
  - Moles/liter. sec
  - Moles. sec/liter
- Which is of the following dosage forms exhibits faster rate of reaction under normal conditions?
  - Emulsions
  - Ointments
  - Solutions
  - Suspensions
- In chemical reaction, the rate constant is independent of the initial concentration. Which one of them is the order?
  - First
  - Second
  - Pseudo first
  - Zero
- The accelerated stability studies are primarily used to determine:
  - Energy of the activation of the reaction
  - $k$  value at elevated temperatures
  - $k$  value at the room temperature
  - Shelf life of the product
- During storage, crystal growth is observed in a suspension due to:
  - Absorption of water
  - Presence of suspending agent
  - Fluctuations in the ambient temperatures
  - Volatilization of solids
- In practice, an acceptable suspension should have particles:
  - of nearly 0.1 micrometer
  - which can be readily re-dispersible after they settle
  - which should form a cake after settling
  - should not settle
- The true density of talc is 2.7 g/cc, the bulk density (g/cc) of talc will be:
  - equal to 2.7
  - greater than 2.7
  - less than 2.7
  - unrelated
- Sieving method is used for size distribution analysis of powders. The disadvantage of this method is:
  - agglomerates can be identified
  - attrition of powder is possible
  - large number of sieves are required
  - tedious and time consuming



**PART-B : Descriptive**

Time: 1 hr. 40 minutes

Marks : 35

[ Answer any seven (7) ]

1. The following data were collected by means of an optical microscope. 5

Size group( $\mu\text{m}$ )	10-15	16-20	21-25	26-30
Number (n) of Particles	15	20	25	35

Compute the Mean volume-surface diameter.

2. Derive the zero-order kinetic reaction equation. 5
3. Draw the schematic diagram about the formulation of flocculated and deflocculated of suspension. 5
4. What is deformation of solids? Explain the different types of elastic modulus. 1+4=5
5. Write any three of the theories of emulsification. 5
6. Discuss briefly about the different types of Non-Newtonian flow. 5
7. Explain the angle of repose, dispersibility, compressibility index and Hausner's ratio. 5
8. Write details about the bulk density, true density and porosity of powders. 5
9. What is rheology? Write about the derivation of viscosity. 1+4=5

Time : 1 Hr.

Marks : 20

[ Answer any two (2) ]

1. Derive the first order reaction, their half-life and shelf-life equation. 10
2. Explain the causes for the instability of an emulsion. 10
3. Write about the kinetic properties of colloidal dispersion. 10

== \*\*\* ==