

Programme: B. Pharm
Course: Physical Pharmaceutics II
Course Code: BP403T
Enrolment no. _____

Full Marks: 75
Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Objective Type Questions			
	i. Which of the following is NOT a method used for particle size analysis? a. Sieving b. Sedimentation c. Viscosity measurement d. Microscopy ii. The particle size range for powders generally falls between: a. 1 mm – 10 mm b. 1 μm – 1000 μm c. 1 nm – 10 nm d. 1 cm – 5 cm iii. Which technique is used for measuring particle size distribution in a suspension? a. UV spectroscopy b. Polarimetry c. Sedimentation method d. Refractometry iv. What does a high Carr’s Index value indicate? a. Excellent flow b. Good compressibility c. Poor flowability d. High surface area v. Which of the following is a Newtonian fluid? a. Blood b. Water c. Toothpaste d. Emulsion vi. Fluid that shows yield stress is called: a. Newtonian b. Thixotropic c. Plastic d. Dilatant vii. Brookfield viscometer works on the principle of: a. Capillary flow b. Rotational resistance c. Falling ball d. Ultrasonic waves viii. Which type of rheology is exhibited by emulsions and suspensions? a. Newtonian b. Dilatant c. Non-Newtonian d. Isotropic ix. In Bingham plastic systems, the flow starts only after exceeding: a. Shear rate b. Yield stress c. Viscosity d. Elastic limit x. Which one of the following physical Property is NOT a rheological property? a. Body and slip b. Spreadability c. Surface tension d. Viscosity xi. Brookfield viscometer is an example of : a. Cone and plate b. Extrusion c. Rotation sphere d. Rotating spindle xii. As the temperature increases, the viscosity of liquid..... a. Decreases b. Increases c. Sustainly increases d. Remains constant xiii. The ratio of stress to strain is called a. Poisson ratio b. Young modulus c. Shear strain d. Elastic modulus xiv. The type of particle diameter that is obtained by microscope method of evaluation is: a. projected b. stokes c. volume d. volume-surface xv. Which one of the following colloids is difficult to prepare? a. Association b. Hydrophilic c. Hydrophobic d. Lyophilic xvi. For an ideal suspension, the sedimentation volume should be: a. Equal to one b. Less than one c. More than one d. Zero xvii. Solutions of proteins and starch in water are the examples of the colloidal type: a. Hydrophilic b. Hydrophobic c. Lyophilic d. Lyophobic xviii. The solid state decomposition of aspirin in presence of moisture follows the order: a. First b. Pseudofirst c. Second d. Zero xix. In reactions that follow first order kinetics, half-life is expressed by equation: a. 0.693/k1 b. 0.301/k1 c. 0.105/k1 d. k1/0.693 xx. The half-life of a first order reaction is 4 years. What is its shelf life (in years)? a. 0.02 b. 0.03 c. 0.17 d. 0.61	CO1	Remember	1 x 20 = 20
Section II				
2. Short Answer type questions.				
a	Describe the Optical properties of Colloidal Dispersion.	CO1	Understand	
b	Explain the Working principle of Cup and Bob viscometer with diagram.	CO2	Understand	

c	Explain in detail interfacial properties of suspended particles.	CO3	Remember	7 x 5 = 35
d	Enumerate different methods of determination of true density and explain any one.	CO4	Remember	
e	Explain the graphical and half-life method for determination of order reaction.	CO5	Remember	
f	Describe the stability problem of emulsion and write its reason.	CO3	Remember	
	or			
g	Describe the particle-particle interaction and its behavior.	CO3	Understand	
	Explain the principle of Oswald's viscometer with proper diagram.	CO2	Understand	
	or			
	Explain the mechanism of thixotropy with examples.	CO2	Understand	
Section III				
Long Answer Type questions				
3	Explain the first order reaction with suitable example. Deduce an equation for determination of rate constant, half-life and shelf life for first order kinetics. Define the molecularity of reaction with example.	CO5	Analyze	2 x 10 = 20
	or			
	Explain chemical degradation of pharmaceutical compounds due to oxidation. Explain its preventive measures. Define the zero order reaction with suitable example.	CO5	Apply	
4	Elaborate the Hardy Schulze Rule and DLVO Theory. What is Tyndall effect?	CO1	Analyze	
	or			
	Comment on Peptization. Describe the electrical properties of Colloidal dispersion.	CO1	Analyze	

Course Outcomes (CO):

CO1: Acquire knowledge and concept of colloids and its applications

CO2: Develop concept of flow property of fluids & their stress-strain knowledge

CO3: Analyze suspensions and emulsions along with their formulation and stability

CO4: Assessment of particle size, shape and surface area of powders

CO5: Assessment of stability, degradation of medicinal products and expiry date of drug product