GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharmacy Semester-IV EXAMINATION–WINTER-2023

Subject Code:BP403TP   **Date: 16/01/2024**
Subject Name: Physical Pharmaceutics-II
Time: 2:30 PM TO 5:30 PM   **Total Marks: 80**

Instructions:
1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What are colloids? Classify the colloids. Differentiate between different types of colloids.	**06**
	(b)	Discuss the kinetic properties of colloids.	**05**
	(c)	Explain different methods of purification of colloids.	**05**
Q.2	**(a)**	Define viscosity. Classify different viscometers with examples. Explain the principle and working of any one single point viscometer.	**06**
	(b)	Discuss shear thinning and shear thickening system of flow with graph.	**05**
	(c)	Define thixotropy. Explain any one method for its determination and give its application in pharmacy.	**05**
Q.3	**(a)**	Discuss in detail the identification tests of emulsions.	**06**
	(b)	Classify suspension with examples. Differentiate between flocculated and deflocculated suspensions.	**05**
	(c)	Define microemulsions and double emulsions. Differentiate between creaming and cracking.	**05**
Q.4	**(a)**	Enumerate methods to determine the particle size. Explain Anderson's pipette method to determine the particle size with the help of neat diagram.	**06**
	(b)	Explain porosity. Derive its formula. Give its applications in pharmacy.	**05**
	(c)	What is specific surface area? How is it measured by air permeability method?	**05**
Q.5	**(a)**	Define first order reaction with suitable examples. Derive an equation for the determination of rate constant, half life and shelf life for first order reaction kinetics.	**06**
	(b)	Explain chemical degradation of pharmaceutical compounds due to oxidation and hydrolysis. Explain its preventive measures.	**05**
	(c)	Write the objectives, salient features, methodology and limitations of accelerated stability studies.	**05**
Q.6	**(a)**	Define Arrhenius plot and give its significance in calculation of shelf life.	**06**
	(b)	Enumerate different methods of determination of true density and explain any one with neat labelled diagram.	**05**
	(c)	Discuss evaluation parameters of emulsions.	**05**
Q.7	**(a)**	Explain the Newtonian system of flow with examples. What are Bulges and Spurs?	**06**
	(b)	Give reference ranges for angle of repose, carr's index and hausner's ratio in context to flow of powders.	**05**
	(c)	Explain the concept of DLVO theory with energy curves. How this theory is applied in stabilizing the colloidal dispersion?	**05**

*****