Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM - SEMESTER–III EXAMINATION – WINTER -2022

Subject Code:BP302TP **Date: 16/02/2023**

Subject Name: Physical Pharmaceutics-I

Time: 10:30am to 01:30pm **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)**	Define solubility. Discuss mechanisms of solute solvent interactions.	**06**
	(b)	Describe factors affecting on solubility of drugs.	**05**
	(c)	Write a note on solubility of gas in liquids.	**05**
Q.2	**(a)**	What is real solution? Explain in brief about Raoult's law.	**06**
	(b)	Discuss in brief about distribution law.	**05**
	(c)	Differentiate between Melting temerature and Glass transition temperature.	**05**
Q.3	**(a)**	Classify types of liquid crystals. Enumerate pharmaceutical and cosmetic applications of liquid crystals.	**06**
	(b)	Describe Eutectic mixtures with suitable examples.	**05**
	(c)	Define refractive index. Discuss measurement and applications of refractive index.	**05**
Q.4	**(a)**	What is CMC? Discuss pharmaceutical applications of CMC.	**06**
	(b)	Describe capillary rise method for determination of surface tension.	**05**
	(c)	Explain: i. Dissociation constant ii. Dielectric constant	**05**
Q.5	**(a)**	Enumerate different type of adsorption curves. Explain Langmuir Adsorption isotherm.	**06**
	(b)	Draw HLB scale showing functions of surfactants. Enumerate methods used for determination of HLB value.	**05**
	(c)	Describe role of surfactant in drug solubilisation.	**05**
Q. 6	**(a)**	Class types of complexation. Describe applications of complexation.	**06**
	(b)	Discuss applications of protein binding pharmacy.	**05**
	(c)	Explain the examples of drug-cyclodextrin complexes with their pharmaceutical applications.	**05**
Q.7	**(a)**	What is buffer capacity? Describe applications of buffer in Pharmacy.	**06**
	(b)	Describe Sorensen's pH scale.	**05**
	(c)	Describe methods used to determine tonicity of solution.	**05**

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