Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph. – SEMESTER- III EXAMINATION – WINTER -2021

Subject Code: BP302TP **Date: 17/02/2022**

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)**	Describe the solute - solvent interactions that influence the solubility of drugs in liquids.	**06**
	(b)	Define & explain solubility. Discuss different solubility expressions.	**05**
	(c)	Explain Henry's law and factors affecting for solubility of gases in liquids.	**05**
Q.2	**(a)**	Define & explain for the state of matter (i) Critical point (ii) Eutectic mixture.	**06**
	(b)	Describe different types and applications of liquid crystals.	**05**
	(c)	Write short note on polymorphism.	**05**
Q.3	**(a)**	Define surface tension and express it in terms of surface free energy.	**06**
	(b)	Describe capillary rise method to determine surface tension.	**05**
	(c)	Write short note on spreading co-efficient.	**05**
Q.4	**(a)**	Define complexes. Write applications of complexation in pharmacy.	**06**
	(b)	Write short note on chelate type complexes.	**05**
	(c)	Describe solubility method to determine the formation of complex and it's stability constant.	**05**
Q.5	**(a)**	Explain buffer & buffer capacity. Write applications of buffers in pharmacy.	**06**
	(b)	Describe electrometric method to determine pH.	**05**
	(c)	Explain isotonic solutions & paratonic solutions. Describe freezing point depression method for adjusting the tonicity of a solution.	**05**
Q. 6	**(a)**	Explain distribution law. Write it's limitations and applications.	**06**
	(b)	Explain Refractive Index. Write it's applications.	**05**
	(c)	Define Dielectric Constant. How it is measured?	**05**
Q.7	**(a)**	Write short note on Hydrophilic - Lipophilic Balance (HLB).	**06**
	(b)	Write short note on Langmuir adsorption isotherm.	**05**
	(c)	Explain protein binding. Write importance of protein binding.	**05**

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