

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Ph. – SEMESTER III – • EXAMINATION – WINTER -2020

Subject Code: BP302TP**Date: 04/03/2021****Subject Name: Physical Pharmaceutics-I****Time: 02:30PM TO 04:30PM****Total Marks: 54****Instructions:**

1. Attempt any THREE questions from Q-1 to Q-6.
2. Q.7 is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

Q.1	(a)	Define real and ideal solution. Give the derivation of Raoult's law with its application.	06
	(b)	Give a brief note on solubility of gas in liquid.	05
	(c)	Discuss Distribution law with its limitation and application.	05
Q.2	(a)	Write a note on liquid crystals.	06
	(b)	Discuss two component system containing phenol water liquid phases.	05
	(c)	Define Polymorphism. Write its type with importance in pharmaceutical industry.	05
Q.3	(a)	Give a brief note on eutectic mixture in context with Thymol - Salol system.	06
	(b)	Explain solute – solvent interaction with ideal solubility parameter.	05
	(c)	Define: Refractive index, optical rotation, dielectric constant, dipole moment, dissociation constant	05
Q.4	(a)	Define surface tension. Discuss Du-Nouy Ring method in detail.	06
	(b)	Write a brief note on spreading co-efficient.	05
	(c)	Give the difference between surface tension and interfacial tension. Write a brief note on HLB scale.	05
Q.5	(a)	Define complexation. Discuss methods of analysis of complexes.	06
	(b)	Give the classification of complexation and write importance of complexation.	05
	(c)	Write a brief note on protein binding.	05
Q. 6	(a)	Discuss the methods to determine pH of buffers.	06
	(b)	Define buffer capacity. Write the application of buffers in pharmaceuticals.	05
	(c)	Explain isotonicity with its importance. How isotonicity is maintained in buffer solution.	05
Q.7	(a)	Write the difference between crystalline and amorphous form of solid.	06
		OR	
	(a)	Explain aerosol with its application in Pharmaceutical industry.	06
		OR	
	(a)	Define surface free energy. Write a note on surface active agents.	06
