Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 2- EXAMINATION –WINTER - 2018

Subject Code: 2220001   **Date: 19/12/2018**
Subject Name: Physical Pharmacy
Time: 02:30 PM TO 05:30 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)**	Define and Explain phase rule. Discuss phase diagram for one component system.	**06**
	(b)	Write a note on : Liquid crystals and Glassy state.	**05**
	(c)	Discuss in details about binding forces between molecules.	**05**
Q.2	**(a)**	Define Solubility. Describe the influence of surfactants on solubility.	**06**
	(b)	Explain kinetic properties of colloids.	**05**
	(c)	Describe solubility of gases in liquids.	**05**
Q.3	**(a)**	Define emulsion and classify with suitable examples. Explain the theory behind stability of emulsion.	**06**
	(b)	What is meant by controlled flocculation? Discuss the various means by which controlled flocculation can be achieved.	**05**
	(c)	Explain Sedimentation Parameter of suspension in detail.	**05**
Q.4	**(a)**	Define micromeritics. Explain method for determining particle surface area of porous materials.	**06**
	(b)	Discuss the derived properties of powder.	**05**
	(c)	Describe briefly optical microscopy for particle size determination with its advantages and disadvantages.	**05**
Q.5	**(a)**	What is Surface tension.Enumerate the methods for the determination of surface andinterfacial tension. Explain capillary rise method.	**06**
	(b)	Explain about Solute - solvent Interaction for polar and non polar solvent.	**05**
	(c)	Write an note on HLB	**05**
Q. 6	**(a)**	Differentiate between(i) ideal and real solution (ii) Lyophilic colloids and Lyophobic colloids.	**06**
	(b)	Give the pharmaceutical applicatios of complexes in dosage forms.	**05**
	(c)	Write a note on Spreading coefficient.	**05**
Q.7	**(a)**	Classify various instruments for measurement of viscosity. Descuss on rotating spindle type viscometer .	**06**
	(b)	What is thixotropy and antithixotropy. Give its Pharmaceutical applications.	**05**
	(c)	Define and explain: Angle of repose and Carr's Index with their pharmacopoeial specification.	**05**

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