Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BPHARM – SEMESTER II • EXAMINATION – SUMMER • 2014

Subject code: 220006 Date: 06-06-2014

Subject Name: Physical Pharmacy

Time: 02:30 pm - 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)**	Classify complexes and write on metal complexes in detail.	**06**
	(b)	Differentiate between channel lattice type and clathrates complexes.	**05**
	(c)	Enumerate methods of analysis for complexes. Write on pH titration method.	**05**
Q.2	**(a)**	Write in brief on any two: i) Protein binding ii) Pharmaceutical application of colloids iii) Association colloids	**06**
	(b)	What are kinetic properties of colloids?	**05**
	(c)	Explain electrical properties of colloids.	**05**
Q.3	**(a)**	Write on: i)Particle and particle size distribution ii)Number and weight distribution	**06**
	(b)	Explain derived properties of powders.	**05**
	(c)	Give in brief methods to determine particle shape and surface area.	**05**
Q.4	**(a)**	Give Newton's law of flow. Define kinematic viscosity. Give relation between temperature effect on viscosity of liquids.	**06**
	(b)	Write briefly on any one: i) Plastic Flow ii) Pseudoplastic Flow iii) Dilatant Flow	**05**
	(c)	Write on Thixotropy, measurement of thixotropy and its applications in pharmaceutical formulations.	**05**
Q.5	**(a)**	Write in short on any one: i) Sedimentation of flocculated particles ii) Difference between flocculated and deflocculated suspensions. iii) Formulation of suspensions.	**06**
	(b)	Give types, applications and preservation of emulsions.	**05**
	(c)	Write on Rheological properties of emulsions.	**05**
Q. 6	**(a)**	Write in brief on (any two): 1. Spreading Coefficient 2. CMC 3. Surface Active Agents 4. Systems of HLB classification	**06**
	(b)	Write on: Surface and interfacial tensions and techniques of their measurement. Write in brief on Surface Free Energy.	**05**
	(c)	Write in details on: Physical Stability of emulsions.	**05**
Q.7	**(a)**	Explain Liquefaction of gases and Methods of achieving liquefaction. Give application of this phenomenon in Pharmacy.	**06**
	(b)	Explain the following(any one): i) Crystalline solids ii) Polymorphisms iii) Amorphous solids	**05**
	(c)	Discuss 2 component systems containing liquid phases or Ternery systems with one pair of partially miscible liquids.	**05**

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