

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – II • EXAMINATION – WINTER • 2015

Subject Code: 2220001

Date: 21-12-2015

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) Write a note on binding forces between molecules.	06
	(b) Explain Phase equilibria for system containing two components.	05
	(c) Define: Angle of repose. Describe Angle of repose and write relationship with powder flow.	05
Q.2	(a) Define solubility. Describe the influence of surfactants on solubility.	06
	(b) Discuss factor influencing solubility of gases in liquid.	05
	(c) Give general principles of Solubility.	05
Q.3	(a) Write electric properties of interfaces (Solid/liquid) and give its importance in pharmaceutical systems.	06
	(b) What is spreading coefficient? Derive its equation.	05
	(c) What is surface tension? And write unit. Write a note on surface active agents	05
Q.4	(a) Write note on metal complexes.	06
	(b) Enumerate method use for determination of protein binding. Write in detail all.	05
	(c) Enumerate various properties of colloids. Explain in detail optical properties.	05
Q.5	(a) Explain protective colloidal action in detail.	06
	(b) Write a note on Controlled Flocculation.	05
	(c) Discuss physical instability of emulsion.	05
Q. 6	(a) Enlist the methods for particle size determination. Write in detail any two.	06
	(b) Enumerate the derived properties of powder. How are they evaluated?	05
	(c) Explain the methods for determining surface area.	05
Q.7	(a) Describe thixotropy and negative thixotropy. How to evaluated thixotropy?	06
	(b) Explain Non Newtonian fluids with examples.	05
	(c) In calibrating the cup and bob combination of Stormer viscometer a National Bureau of standards. Newtonian oil with a viscosity of 200. Poises at 20 °C was used. With a weight of 2400 g on weight hanger, the bob rotated at 600 rpm. a) Compute the instrumental constant K_v . And following data were collected a sample of white petrolatum was analyzed in a Stormer viscometer: $w = 1800g$, $w_f = 1420g$, $v = 500$ rpm and instrumental constant K_v as per calibration of instrumental. b) What is the plastic viscosity in poises of this sample?	05
