Smt. R. D. Gardi B.Pharmacy college, Nyara, Rajkot

B.Pharm. (Semester-II) Mid-Semester Examinations: 2009

[Time: 2 Hours] Date: 06/04/2009 [Max. Marks: 40]

PHYSICAL PHARMACY

SECTION-I (ESSAYS): Attempt any TWO. **(8 x 2 = 16)**

1. **(A) Discuss various factors affecting the solubility of gases in liquid.**
   (B) A mixture containing 50% by weight of phenol in water is prepared and allowed to come to equilibrium at 30°C. The two liquid phases that separate contain 8.4% and 72.2% of phenol respectively. If the total weight of original mixture was 500 gms, calculate (i) The weight of each phase at equilibrium (ii) Actual weight of phenol in grams of each phase.

2. **(A) What is tonicity of solution? Explain methods of adjusting tonicity.**
   (B) A solution contains 1 gm of ephedrine HCl (1:1 salt) in a volume of 100 ml. What amount of NaCl is equivalent to ephedrine HCl? What quantity of NaCl must be added to make solution isotonic? How much dextrose would be required for this purpose? (E value of drug = 0.23, 1 gm dextrose = 0.16 gm NaCl)

3. **(A) Enumerate methods for determining particle size. Describe any one in detail.**
   (B) Define true density. Explain any one method in detail to determine true density.

SECTION-II (SHORT QUESTIONS): Attempt any FOUR **(4 x 4 = 16)**

4. **Discuss different graphical presentations of size distribution data for a powder.**
5. **Explain the phenomena of solubility of strong electrolyte solid in liquid.**
6. **Write a note on preservative action of weak acid in oil-water system.**
7. **Mutual solubility of partially miscible liquid is influenced by temperature. Comment on the statement with suitable example.**
8. **How much NaCl should be added to prepare isotonic solution of 200 ml drug? The molecular weight of drug is 404.84. It is univalent. The concentration of drug is 1/5000 ml. L_{iso} = 3.4**

SECTION-III (VERY SHORT QUESTIONS): Attempt any FOUR. **(2 x 4 =8)**

9. **Explain briefly the steps for preparation of pharmaceutical buffer solutions.**
10. **What is buffer capacity? Give two examples of pharmaceutical buffers with their pH range.**
11. **Define (i) Granular volume (ii) Bulk volume.**
12. **Shape factor ratio a_s/a_v is 6 for a spherical particle. For an asymmetric particle, this ratio will be more than 6. Justify.**
13. **What is bulkiness? Give its significance.**