Fourth Semester Examination – 2008

PHARMACEUTICS – III

(Physical Pharmacy – II)

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any five from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the following questions :   2 ×10

   (a) Define the terms 'Surface diameter' and 'Stokes diameter'.

   (b) Define 'angle of repose'. Suggest two methods to improve the flow properties of granules.

   (c) Draw the rheograms exhibiting a characteristic bulge and spur in their upcurves. Give one examples in each case.

   (d) What is 'Plug flow' and how it is minimized ?

   (e) State the 'Hofmeister rank order' with examples of cations and anions.

   (f) State and explain 'Sedimentation volume'.

   (g) Define 'Pseudo first order reaction' with example.

   (h) Briefly explain 'Raoult's Law'.

   (i) What do you mean by the following terms :

      (i) Freely soluble

      (ii) Sparingly soluble

      (ii) Slightly soluble

      (iv) Practically insoluble.

(j) List any four intermolecular forces involved in the formation of complexes.

2. List the fundamental properties of powders. Discuss in detail any two methods of determination of particle size. 2+4+4

3. Explain non-Newtonian types of flow with rheograms, mechanisms and suitable examples. 10

4. Discuss in detail the electrical properties of colloids. 10

5. (a) Derive expressions to calculate 'rate constant', 'half life' and 'shelf life' for a zero order and first order reaction. 8

   (b) What is the effect of temperature on the rate of a reaction. 2

6. (a) Define 'Solubility'. Describe in detail the ways of expressing solubility. 4

   (b) Discuss the factors affecting the solubility of gases in liquids. 6

7. Define 'Complexation'. Classify the different types of complexes. Add a detailed account of its importance in Pharmacy. 1+3+6

8. Wrtie notes on : $2\frac{1}{2}\times4$

   (a) Specific surface

   (b) Porosity

   (c) Anti-thixotropy

   (d) Gold Number.

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