

Seat No.: _____

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SARDAR PATEL UNIVERSITY**M. Sc. Pharmaceutical Chemistry, First Semester Examination****Saturday, 29th October, 2016****10.00 a.m. to 1.00 p.m.****Biophysical Chemistry : PS01EPCH01****Total Marks : 70**

Note : (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

Q.1 Choose the correct option for the following:**8x1=08**

- (i) Dissolution rate of tablet can be increases by
 (a) decrease in surface area (b) increase in particle size
 (c) use of the ionized drug (d) use of unionized drug
- (ii) Which instrument is used to measure surface tension of liquid ?
 (a) Stalagmometer (b) Ostwald viscometer (c) Rheometer (d) pH meter
- (iii) The system that undergo gel to sol transformation is known as
 (a) Elastic (b) Permanent deformation (c) Shear thickening (d) none
- (iv) Which ingredient enhances the dissolution of a hydrophobic drug ?
 (a) Gum acacia (b) ethyl cellulose (c) Lactose (d) Mg Stearate
- (v) Electro dialysis method is employed in the colloidal chemistry for the purpose of
 (a) identification (b) purification (c) separation (d) stabilization
- (vi) pH of the solution depends on concentration
 (a) $[H^+]$ (b) $[OH^-]$ (c) $[H^+]$ $[OH^-]$ (d) None
- (vii) Absorption of drug is not a problem for when its solubility is about percent.
 (a) 0.01 (b) 0.001 (c) 0.1 (d) 1.0
- (viii) On commercial scale emulsion are prepared by
 (a) Centrifugation (b) Dialysis (c) Freezing (d) homogenization

7x2=14**Q.2 Answer the following : (Attempt any seven)**

- i. Enlist the main applications of dissolution test.
- ii. Explain the concept of sink condition in dissolution.
- iii. List the category of drug for which dissolution test is essential.
- iv. Define interfacial tension and specific viscosity.
- v. What is meant by HLB ?
- vi. Distinguish between colloidal solution and suspension.
- vii. Find pH of 0.001 M NaOH solution.
- viii. Define lyophilic colloids with suitable example.
- ix. Define emulsifying agents and write its application.

Q.3 Answer the following :

- a. Describe Type- I dissolution apparatus with labeled diagram.
- b. Explain the factors influencing the dissolution of drug.

OR

- b. Derive an equation to evaluate the dissolution profile of drug.

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- Q.4 Answer the following :**
- a. Write the principle and functions of capillary rise method for the surface tension measurement. 06
 - b. Draw flow curve for Newtonian and non-Newtonian type of flow. Give one example of each type of flow. 06

OR

- b. Describe the concept and working principal of Ostwald viscometer. 06

- Q.5 Answer the following :**

- a. Describe preparation of pharmaceutical buffer system. 06
- b. Discuss the various factors affecting pH of buffer solution. 06

OR

- b. Derive Henderson-Hasselbalch equation and explain its significance. 06

- Q.6 Answer the following :**

- a. Define suspension, give its type and also write pharmaceutical advantages and disadvantages of suspensions. 06

- b. Define emulsion. Classify it and write about pharmaceutical application of emulsion. 06

OR

- b. Discuss in detail about pharmaceutical application of colloids. 06

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