ASTU M. Ph. 1st Sem. 6/12/13 (Reg)

Total No. of printed pages = 5

PY134106

Roll No. of candidate | | | | | | | | | | |

2013

(Odd Semester)

ADVANCED PHYSICAL PHARMACEUTICS

Full Marks–100 Pass Marks–35 Time–Three hours

The figures in the margin indicate full marks for the questions.

Answer *eight* questions taking *three* from each section. Question Nos. 1 and 6 are compulsory.

SECTION – A

1. (a) How different polymorphic form of a solid differ each other ? 2

   (b) Enlist the parameters help to characterize the permeation behaviour of a drug. 2

   (c) How intrinsic dissolution differ from particulate dissolution ? 2

   (d) How radial tensile strength of tablet is determined ? 1

[Turn over

(e) Define molecularity and order of reaction with examples. 1

(f) The solid state decomposition of aspirin in presence of moisture follows the order —. 1

(g) How does dielectric constant of solvent influence on the reaction rates ? 1

(h) What is the significance of activated complex ? 1

(i) The half life of a first order reaction is 4 years. What will be the shelf-life in years ? 1

(j) How does the rate constant of a reaction vary with temperature ? Explain with the help of Arrhenius equation. 1

(k) How does re-test date differs from re-test period in stability evaluation of pharmaceutical products ? 1

2. Discuss physics of tablet compression. Explain the properties of tablet influenced by compression with proper figure. 6+6=12

3. Discuss the timing and objectives of preformulation study. Discuss solid-state stability testing as a part of preformulation study in designing a solid dosage form. 4+8=12

4. Explain the stability guidelines of FPP'S as per ICH. What is Bracketing and Matrixing design of stability studies ? Enlist the stability testing attributes of tablets, soft gelatin capsules, inhalations, LVP's and emulsions. 5+4+3=12

5. How drugs are stabilized against oxidation and hydrolysis ? Discuss the mechanism with examples. Explain pseudo first order mechanism with examples and equations. Deduce the final integral equations when $a \neq b$. 5+3+4=12

SCTION – B

6. (a) How to obtain poly (phosphoesters) from urethranes. Give the physical properties of phosphoesters. 1

(b) Write a note on mechanical properties of polymer. 2

(c) Write a note on emulsion polymerization. 2

(d) How polymers are used for distribution control of drug in the body ? 2

(e) What are the major limitations for the prodrug approach of enhancement of solubility ? 1

(f) Arrange is increasing order of solubility- metastable, stable, amorphous. 1

(g) Name two penetration enhancers which are very quickly and strongly acting but cause reversible damage to membrane. 1

(h) Which are the BCS class V drugs ? 1

(i) Give two limitations of solid dispersion method. 1

(j) Define micellar solubilisation. 1

(k) What are Inclusion complexes ? Give its application in enhancement of solubility. 1

7. Write a note on molecular weight and molecular weight distribution of polymers. How polymer molecular weight can be determined by measuring osmotic pressure and viscosity. 6+6=12

8. Write a detailed note on biodegradable polymers. What are the advantages offered by biodegradable polymers ? Discuss the erosion and drug release from biodegradable polymers. 3+3+6=12

9. Describe in detail the various methods for enhancement of Bioavailability with suitable examples. 12

10. Write short notes on the following : 6×2=12

(a) Prodrug approach for enhancement of drug bioavailability.

(b) Methods for enhancement of Dissolution of drugs.