PPP-014-003703 Seat No. _____

M. P. M. (Sem. VII) Examination

November / December - 2018

Dosage Form Design - I

Faculty Code : 014

Subject Code : 003703

Time : **3** Hours] [Total Marks : **80**

Instructions : (1) Attempt three questions from each section.
(2) Questions 1 and 5 are compulsory.
(3) Tie each section separately.
(4) Figure to the right indicates full marks for the respective question.

SECTION – I

1 Answer the following questions : (any **seven**) **14**

(1) Give four examples of natural gum.
(2) Give four examples of biodegradable polymer.
(3) Give four examples of polymer used for achieving modified drug release.
(4) Write equation to find similarity factor value in dissolution study.
(5) Explain passive diffusion.
(6) Explain active transport.
(7) Enlist Factors affecting dissolution.
(8) Define Hepatic Clearance.
(9) Define Volume of distribution.
(10) Define Plasma Protein Binding.

2 Answer the following :

(1) How to stabilize active drugs against various chemical degradation ? **7**
(2) Comment "Pro-drug approaches improve stability and bioavailability of drugs". **6**

3 Answer the following :

(1) Enlist various physical properties of drug affecting drug formulation. Describe effects of particle size on formulation. **7**

(2) Explain BCS Classification with their significance. **6**

4 Answer the following :

(1) Describe dissolution apparatus for various dosage forms. **7**

(2) Explain polymorphisms and pseudo polymorphism. **6**

SECTION – II

5 Answer the following : (any **two**) **14**

(1) Explain Michaelis menten equation. Explain how one can detect nonlinear Pharmacokinetics ?

(2) What are causes for non-linearity in drug absorption, distribution, Metabolism and excretion ?

(3) Define Biopharmaceutics and describe its role in formulation development with detailed example.

6 Answer the following :

(1) Describe physicochemical factors affecting drug absorption. **7**

(2) Define Bioavailability and Bioequivalence. Describe statistics used in bioequivalent studies. **6**

7 Answer the following :

(1) What are regulatory requirements for conduction of bio-equivalent Studies ? **7**

(2) Describe compartment kinetics of one compartment and two compartment models. **6**

8 Answer the following :

(1) Enlist different methods for determination of pharmacokinetics parameters from urinary excretion data and explain any one method in detail. **7**

(2) Write a note on Wagner Nelson method for determination of absorption rate constant. **6**
