FINAL YEAR B.PHARM. SEMESTER-VII (2011 COURSE) :
SUMMER - 2018
SUBJECT: BIOPHARMACEUTICS & PHARMACOKINETICS

Day: **Wednesday** Time: **02.00 PM TO 05.00 PM**
Date: **02/05/2018** Max. Marks: 80

S-2018-3979

N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from each section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

Q.1 Answer any **FIVE** of the following: **(10)**

a) Thiopental has fast onset of action followed by rapid termination of action. Explain.

b) Define volume of distribution and clearance.

c) Differentiate between active transport and facilitated diffusion.

d) Explain with example the significance of drug- drug interaction in case of protein –drug binding.

e) Explain the influence of pH of microenvironment on the dissolution of drug.

f) Explain dose adjustment in renal failure.

Q.2 **a)** Highlight the role of polymorphism with respect to drug absorption. **(08)**

b) Give an account of influence of manufacturing variables in the tablet dosage form with respect to drug absorption. **(07)**

Q.3 **a)** Explain effect of urine pH and drug pKa on renal clearance. **(08)**

b) Give an account of kinetics of protein –drug binding. **(07)**

Q.4 Write short notes on any **TWO** of the following: **(15)**

a) Physiological barriers to drug distribution

b) Chemical factors affecting biotransformation

c) Carrier mediated drug transport

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SECTION-II

Q.5 Answer any **FIVE** of the following: **(10)**

a) Explain the trapezoidal rule to determine AUC.

b) Define MRT and give its equation.

c) Give the objectives of bioavailability studies.

d) Define clinical pharmacokinetics and pharmacodynamics.

e) What is cross over design?

f) Explain physiological model.

Q.6 **a)** Compute the mathematical expression to obtain k_E following I.V. infusion assuming one compartment open model. **(08)**

b) Explain the pharmacokinetic approach to determine bioavailability. **(07)**

Q.7 **a)** Give an account of different approaches to improve bioavailability of drug. **(08)**

b) Explain the different study design for bioequivalence testing. **(07)**

Q.8 Write short notes on any **TWO** of the following: **(15)**

a) Method of Residuals

b) Compartmental modelling

c) Non compartmental pharmacokinetics

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