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PY 134104

Roll No. of candidate

2016

M. Pharm 1st Semester End-Term Examination

BIOPHARMACEUTICS AND PHARMACOKINETICS

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

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

1. Define any *five* of the following terms : 2×5=10

(a) Apparent volume distribution

(b) BCS system of classification

(c) Biological half life

(d) Bioequivalence

(e) Total clearence

(f) % of drug metabolised.

2. Briefly answer any *ten* of the following questions : 3×10=30

(a) Explain the 'mean residence time'.

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(b) What is the importance of salivary excretion of drugs ?

(c) What is 'first-pass metabilosm' ? Explain its clinical significance.

(d) What do you mean by pharmacokinetic drug interaction ?

(e) What are the objectives of bioavailability studies ?

(f) What are the major parameters studied in the urinary excretion data ?

(g) Enlist the methods to enhance the bioavailability through enhancement of drug solubility.

(h) What is plasma level time curve ?

(i) The dose of amoxicillin capsule was 500 mg and the AUC was 50.9 mcghr/L. The dose of suspension was 500 mg and the AUC is 61.93 mcghr/L. Calculate the relative bio-availability of capsule to the oral suspension.

(j) What is enterohepatic cycle ?

(k) Briefly mention influence of alcohol, smoking and food on drug action.

(l) What is pharmaceutical equivalence ? What are the criteria to be considered for determination of pharmaceutical equivalence ?

3. Write short notes on any *four* : 5×4=20

(a) Physiological barrier to drug distribution.

(b) Limitations of multi-compartmental analysis.

(c) Apparent volume of distribution.

(d) Statistical moment theory.

(e) Chronopharmacokinetic.

(f) Open and closed compartments model.

4. Answer any *two* of the following questions : 5×2=10

(a) Explain pharmacokinetic model and their objectives.

(b) Write the procedure involved in the determination of elimination rate constant using urinary excretion data.

(c) Explain Wagner-Nelson method. Write about its merits and demerits.

5. Answer any *three* of the following questions : 10×3=30

(a) What is capacity limited kinetics ? Explain the causes of non-linearity. Discuss the application of Michaelis-Menton equation in non-linearity.

(b) What are the factors affecting drug absorption? Discuss the Loo-Riegelman method for determination of absorption rate constant.

(c) Discuss the kinetics of protein binding. How protein binding affects drug distribution ?

(d) The following data is obtained after a single dosage of a drug taken by extravascular route. Then, calculate elimination rate constant (K_E) and half life ($t_{½}$).

Time (hrs.)	0	1	2	3	4	5	6	7	8
Drug concentration (μg/ml)	0	7	10	5	2.5	1.25	0.6	0.2	0.1