

Fifth Year Pharm. D (SUPPLEMENTARY) : SUMMER - 2019
SUBJECT : CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC
DRUG MONITORING

Day : Wednesday
Date : 03/07/2019

Time : 10.00 A.M. TO 01.00 P.M.
Max. Marks : 70

S-2019-4555

N.B.:

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

SECTION – I

- Q.1 A) Attempt ANY FOUR of the following: [08]**
- i) 'Renal impairment requires dose/dosage adjustment'. Why?
 - ii) Enlist factors affecting drug absorption.
 - iii) Write the significance of Therapeutic Index (TI).
 - iv) What do you mean by intrinsic clearance of drugs?
 - v) Calculate IBW and BMI of a female patient whose weight is 64 kg and height is 179 cm while age is 40 years.
- B) Define volume of distribution. A patient visits her doctor with symptoms typical of a bladder infection. She is immediately prescribed with an antibiotic ($t_{1/2} = 12$ hr). The corresponding plasma concentration of drug is found to be 98 mcg/ml. What is volume of distribution of this drug? [03]**
- Q.2 What is population pharmacokinetic data? Explain in detail the methods adopted in analysis of such data. [12]**
- Q.3 a) Write the basis of Bayesian theory with suitable example. [07]**
- b) Give the factors affecting drug disposition and response in elderly population. [05]**
- Q.4 Write short notes on ANY THREE of the following; [12]**
- a) Genetic polymorphism in drug metabolism for CYP2D6
 - b) Dosage adjustment for uremic patients
 - c) Prediction of creatinine clearance from serum creatinine
 - d) Drug interactions in building excretion

P.T.O.

SECTION – II

- Q.5 A)** Attempt **ANY FOUR** of the following: [08]
- i) What is polymorphism?
 - ii) Enlist factors affecting expression of CYP isoenzymes.
 - iii) Mention any two significance of pharmacokinetic – pharmacodynamic correlation.
 - iv) What is meant by dosing with feedback?
 - v) Calculate the creatinine clearance for a child (8 years; body length 122 cm) whose serum creatinine value is 0.9 mg/dl.
- B)** The maintenance dose of Gentamicin is 80 mg every 6 hours in a patient with normal renal function (normal creatinine clearance of 100 ml/min). Calculate the dose for a uremic patient with creatinine clearance of 20 ml/min. (Given $K_u/K_N = 0.2$) [03]
- Q.6** Explain the protocol for therapeutic drug monitoring (TDM) service. [12]
- Q.7 a)** Explain in brief the developmental factors affecting drug pharmacokinetics with examples. [07]
- b)** Explain the types of IV to oral conversion with suitable examples. [05]
- Q.8** Write short notes on **ANY THREE** of the following: [12]
- a) Physiologic model
 - b) Zero order kinetics
 - c) Drug dosing in obese patients
 - d) TDM of theophylline

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