Reg. No.															

M.Pharm Exam 23 DEGREE EXAMINATIONS, APRIL 2025

MPP203T - CLINICAL PHARMACOKINETICS AND THERAPEUTIC DRUG MONITORING

((For the candidates admitted during the academic year 2017-2018 onwards))

Time: Three Hours | Max. Marks: 75

Part - A (5 × 5 = 25 Marks)

Answer ALL Questions

		Marks	BL	CO
1.	Outline the methods used for the estimation of bioavailability and discuss the key determinants that affect bioavailability.	5	2	1
2.	Discuss the role of Cytochrome P-450 isoenzymes in drug metabolism, include examples of drugs affected by these enzymes.	5	3	2
3.	Describe model misspecification, its causes, impact on pharmacometric analysis, and methods to identify.	5	2	3
4.	Explain the considerations for drug dosing in pediatrics and compare the available pediatric drug dosing formulas, highlighting their strengths and limitations.	5	2	4
5.	Explain the therapeutic drug monitoring of Lithium and Fluoxetine.	5	1	5

Part - B (5 × 10 = 50 Marks)

Answer ANY FIVE Questions

		Marks	BL	CO
6.	Discuss the process of converting from intravenous to oral dosing, including the reasons for the switch, methods used, and provide examples.	10	2	1
7.	Provide an introduction to Bayesian theory and discuss the adaptive dosing method with feedback, explaining how it is applied in clinical practice for individualized drug therapy.	10	2	2
8.	Explain the precision of parameter estimates and the role of confidence intervals in pharmacometric analysis, including their significance in model evaluation.	10	3	3
9.	Discuss drug dosing in hepatic failure, explaining the pharmacokinetic challenges involved, and provide suitable example.	10	2	4
10.	Discuss the individualization of drug dosage regimens, such as age, weight, organ function, and genetic factors.	10	2	5

11.	a. Discuss the calculation of loading and maintenance doses, explain their importance in drug therapy and how they are determined.	5	2	1
	b. Define pharmacometrics and explain its role in optimizing drug therapy, including its applications in drug development and clinical practice.	5	2	2
12.	a. Explain the concept of the Structural or Base Model in pharmacometric analysis.	5	2	3
	b. Discuss the concept of extracorporeal removal of drugs, including the methods used and the need for replacement of drug loss during this process.	5	2	4
13.	Explain the therapeutic drug monitoring (TDM) of drugs used in cardiovascular diseases, specifically Digoxin, Lidocaine, and Amiodarone.	10	2	5

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