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M. Pharmacy 1st Semester Examination

Biopharmaceutics

MP-112

Time : 3 Hours **Max. Marks : 90**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any one question from Section A, three questions from Section B and seven questions from Section. C.

SECTION - A

1. Define Bioavailability. Describe in detail methods of determining Bioavailability. What would be the relative and absolute bioavailability of drug 'x' when 150 mg of drug administered as IV bolus and as a tablet and syrup provides the AVC of 30; 18 and 25 µg/ml.h? **(25)**

2. Define ADME. Explain various mechanisms of drug transport across biological membranes citing suitable examples. **(25)**

SECTION - B

3. Explain Noyes-Whitney equation. Discuss factors affecting drug dissolution and methods to improve dissolution rate. **(10)**

4. Discuss the dosage form factors influencing drug absorption from G.I.t. **(10)**

5. Write an account on Inhalational drug delivery. **(10)**

6. What is drug biotransformation? Discuss pathways of biotransformation. **(10)**

SECTION - C

7. Explain Henderson-Hasselbalch's equation and its significance. **(5)**

8. Write short note on renal excretion of drugs. **(5)**

9. How in vitro and in vivo correlation of drugs is established? What is the criteria for giving waiver for in vivo bioequivalence studies? **(5)**

10. How plasma protein binding of drugs influences their distribution? **(5)**

11. Explain buccal and sublingual routes of drug administration. **(5)**

12. What is biliary excretion of drugs? Which drugs are excreted in bile? Give its significance. **(5)**

13. Explain the terms 'plasma volume', extracellular fluid volume', intracellular fluid volume', 'total body water'. How these volumes are determined? **(5)**

14. Explain the requirements for filing New Drug Application (NDA). **(5)**

15. Write short note on any one of the following:

    (a) Parenteral drug absorption.

    (b) Tissue distribution. **(5)**