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Enrolment Number										

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Winter, 2023

M. Pharm 2nd Semester Examination (Pharmacology)

PRINCIPLES OF DRUG DISCOVERY

Course Code: MPL 203T

Full Marks – 75 **Time – 3 hours**

The figure in the margin indicates full marks for the questions.

1. Answer the following questions (Any five): *(word limit: 200 words)* (5 X 4 = 20)

   a. Explain target identification and validation with an example.

   b. Describe the levels of protein structure with neat diagram.

   c. Analyse Hansch and Free Wilson analysis.

   d. Outline the Protein microarray in target discovery.

   e. Differentiate traditional vs rational drug design.

   f. Give an outline about Combinatorial chemistry.

2. Short answers (Answer any seven) *(word limit: 500 words)* (7 X 5 = 35)

   a. Explain the role of transgenic animals in target validation.

   b. Discuss the role of bioinformatics in target validation.

   c. Explain briefly the application of NMR in protein structure prediction.

   d. Write a note on applications of pro-drug to improve site-specific drug delivery.

   e. Elaborate on the types of molecular docking. Explain in detail, using an example, the steps involved in performing a docking study.

   f. Discuss the concept of Pharmacophore mapping and Pharmacophore-based screening.

   g. Write a note on drug-likeness screening.

   h. Write a note on zinc finger proteins. Write a note on assay development for hit identification.

   i. Define and differentiate between SAR and QSAR.

4. Long answers (Answer any two) *(word limit: 1000 words)* (2 X 10 = 20)

   a. Discuss the role of proteomics and genomics in target discovery and validation. (5+5)

b. Elaborate on the importance of 3D-QSAR approaches involved in drug discovery. Explain the role of COMFA and COMSIA. (5+5)

c. Explain the role of nucleic acid microarrays and antisense technologies in drug discovery. (6+4)