

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M. PHARM
BRANCH: PHARMACY

SEMESTER: SP/25
SESSION: 2024-25

SUBJECT: MPL203T PRINCIPLES OF DRUG DISCOVERY

TIME: 3.00 Hours

FULL MARK: 75

INSTRUCTIONS:

1. The missing data, if any, may be assumed suitably.
2. Before attempting the question paper, be sure that you have got the correct question paper.
3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
5. Answer any five questions.

- 1a. Describe the overview of Modern drug discovery process along with its timeline. [7]
1b. Illustrate various Proteomics tools and their application in target identification and validation. [8]
- 2a. Describe different steps of DNA microarray along with its applications in drug discovery. [7]
2b. Define Antisense technology. Explain its application in target identification. [8]
- 3a. Write notes on siRNA and Genomics. [7]
3b. Define Transgenesis. Describe the application of transgenic animals in drug discovery. [8]
- 4a. Elaborate the basic principle of NMR. Describe the application of NMR in Drug discovery process. [7]
4b. Write the definition and aim of virtual screening. Classify different types of docking studies. [8]
- 5a. Write the definition and classification of the sources of lead compounds. Describe the various undesirable characteristics of lead compounds. [7]
5b. Write the definition and aim of lead optimization. Explain the lead optimization based on enhancing the side effects of another drug. [8]
- 6a. Define combinatorial and parallel synthesis. Explain dynamic combinatorial chemistry. [7]
6b. Define parallel synthesis. Explain Houghton's Tea Bag Procedure of parallel synthesis. [8]
- 7a. Define structure-based and ligand-based drug design with examples. Classify virtual screening based on principles and techniques. [7]
7b. What is QSAR and Pharmacophore modelling? Compare the differences in requirements and applications of these two techniques. [8]

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