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

CLASS: MPharm **SEMESTER: II**
BRANCH: PHARMACY **SESSION: SP/22**

SUBJECT: MPL203T Principles of Drug Discovery

TIME: 3.00 Hours **FULL MARK: 75**

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

1a.	Describe different steps of modern drug discovery process.	[7]
1b.	Define Antisense technology. Explain the application of antisense technology in target identification and validation.	[8]
2a.	Define microarrays. Explain the role of microarrays in target discovery.	[7]
2b.	Explain the role of Transgenic animals in modern drug discovery process.	[8]
3a.	Compare Homology and Threading modelling for the prediction of protein structure.	[7]
3b.	Define the basic principal of NMR. Describe the application of NMR in Drug Discovery Process.	[8]
4a.	Define RNA interference. Describe siRNA in detail.	[7]
4b.	Which regression-based approaches are widely used in QSAR? Describe any ONE of them.	[8]
5a.	What are the differences between manual and automatic docking.	[7]
5b.	How the physicochemical properties of drugs are expressed numerically in quantitative structure activity relationship (QSAR) studies? Why the logarithmic graph of biological activity versus partition coefficient shows a parabolic relationship?	[3+5]
6a.	What are the differences between structure activity relationship and QSAR? Explain QSAR by Hansch analysis.	[2+5]
6b.	How COMFA is used in 3-D QSAR approach? How COMSIA is advantageous over COMFA?	[6+2]
7a.	Discuss the applications of QSAR in prodrug designing with suitable examples in each case.	[7]
7b.	State the properties of an ideal prodrug. Write a note on drug likeliness screening.	[3+5]

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