

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

CLASS: M. PHARM  
BRANCH: PHARMACY

SEMESTER : II  
SESSION : SP/19

SUBJECT: MPL203T PRINCIPLES OF DRUG DISCOVERY  
TIME: 3.00 Hrs

FULL MARKS: 75

**INSTRUCTIONS:**

1. The question paper contains 7 questions each of 15 marks and total 105 marks.
  2. Candidates may attempt any 5 questions maximum of 75 marks.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) What are the properties of a 'lead'? Enumerate the sources of lead compounds with suitable examples for each category. [7]
- Q.1(b) Illustrate drug design through rational approach. [8]
- Q.2(a) Mention the occurrence and characteristics of microsomal and non microsomal enzymes. What are the pathways involved in drug metabolism? [7]
- Q.2(b) Discuss in detail the factors influencing the metabolism of drugs in the body. [8]
- Q.3(a) What is QSAR and how is it different from SAR? Mention the uses and enumerate the physico chemical properties studied in the domain of QSAR. [7]
- Q.3(b) With the help of different mathematical models, explain the correlation of physicochemical parameters with biological activity. [8]
- Q.4(a) Discuss the major steps involved in the microarray technique. [7]
- Q.4(b) Define transgenic animals and mention their role in drug discovery process. [8]
- Q.5(a) Describe Antisense Technology and its applications. [7]
- Q.5(b) Describe different steps of modern drug discovery process. [8]
- Q.6(a) Describe the role of Proteomics in Target Identification and Validation. [7]
- Q.6(b) Describe NMR techniques for the prediction of protein structure. [8]
- Q.7(a) Describe the Threading modelling for the prediction of protein structure. [7]
- Q.7(b) Describe different levels of protein structure in detail. [8]

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