

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

CLASS: MPHARM/PRE-PHD  
BRANCH: PHARMACY

SEMESTER : II/NA  
SESSION : SP/18

SUBJECT: MPH2035 PRINCIPLES OF DRUG DISCOVERY  
TIME: 3.Hours

FULL MARKS: 60

**INSTRUCTIONS:**

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
  2. Candidates may attempt any 5 questions maximum of 60 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) Elaborate the steps for the preparation of a set of molecules for 3D QSAR. [6]  
Q.1(b) Define the following:(i) LOO (ii)  $r^2$  (iii) Cross validation (iv) Hansch equation (v)  $\log 1/C$  (vi)  $r^2_{bs}$ . [6]
- Q.2(a) Assess how combinatorial chemistry can be useful for lead optimization by help of flowchart. [6]  
Q.2(b) Define with diagrams :(i) Mix and split method (ii) Recursive deconvolution. [6]
- Q.3(a) Explain the characteristics of a prodrug. Give examples. [6]  
Q.3(b) Recall the prodrug approach for prolongation of activity. [6]
- Q.4(a) Describe the different steps of the modern drug discovery process. [6]  
Q.4(b) Define Genomics. Explain the role of Genomics in the Target discovery. [6]
- Q.5(a) Describe different levels of protein organization in detail. [6]  
Q.5(b) Explain the role of High Throughput Screening in Lead identification. [6]
- Q.6(a) Define the role of Transgenic animals in Target Validation. [6]  
Q.6(b) Define the basic principle of NMR. Explain the application of NMR in the prediction of protein structure. [6]
- Q.7(a) Write short notes on Tagging in combinatorial chemistry. [6]  
Q.7(b) Write short notes on Microarray technology. [6]

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