

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

CLASS: M.PHARM  
BRANCH: PHARMACY

SEMESTER : I  
SESSION : MO/2022

SUBJECT: MPC103T ADVANCED MEDICINAL CHEMISTRY

TIME: 3:00 Hours

FULL MARKS: 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.
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- Q.1(a) Define the characteristics of a prodrug. Explain one application of prodrug approach (other than ester formation) with structures [7]
- Q.1(b) "Esters are a suitable class of prodrugs". Explain this sentence with proper examples [8]
- Q.2(a) Explain about optical isomers as analog based drug discovery [7]
- Q.2(b) Describe analogs based on (i) Ring transformations (ii) Twin drugs [8]
- Q.3(a) Explain (i) vander waals forces (ii) hydrophobic interaction (iii) Hydrogen bond [7]
- Q.3(b) Explain the various theories of drug action with proper equations [8]
- Q.4(a) Explain the differences between Competitive, Uncompetitive and Non competitive inhibition [7]
- Q.4(b) Elaborate Enzyme inhibition with respect to (i) Sulfonamides (ii) 5-fluorouracil (iii) antiviral agents. [8]
- Q.5(a) Explain pharmacological activity with respect to enantiomerism [7]
- Q.5(b) Define stereoselectivity at the receptor with the help of diagrams [8]
- Q.6(a) A classical case of drug design was exhibited while designing H<sub>2</sub> antagonists. Explain [7]
- Q.6(b) Write the synthesis of (i) Cetrizine (ii) Tripeleminamine [8]
- Q.7(a) Classify antihypertensives and write the synthesis of any two compounds [7]
- Q.7(b) Classify adrenergic drugs. Write the synthesis of (i) Methyl dopa (ii) Prazosin (iii) Clonidine [8]

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