

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

CLASS: IMSC  
BRANCH: CHEMISTRY

SEMESTER : IX  
SESSION : MO/19

SUBJECT: SAC3009 MEDICINAL CHEMISTRY

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) How do hydrophilicity/hydrophobicity impact as bio physico-chemical properties on metabolism? [6]  
What are log P and logD values?
- Q.1(b) Define any two biological activity parameters and discuss their significance? [6]
- Q.2(a) What is Lipinski's rule of five? What are its exceptions? [6]
- Q.2(b) What are ion channel modulators? Discuss their mechanism of action along with examples? [6]
- Q.3(a) Explain with schematic Calcium & Phospho inositol system for breakdown of phospholipids? [6]
- Q.3(b) Briefly describe about bioisosterism and explain the role of nonclassical bioisosteres in the discovery of Losartan as cardiovascular drug. [6]
- Q.4(a) Define Therapeutic index and correlate it with  $C_{max}$  with the help of graphical representation? [6]
- Q.4(b) Discuss the mechanism of enzymatic action with special emphasis on promoters and inhibitors? [6]
- Q.5(a) What do understand with the term "Antimetabolite", describe anti-metabolite mechanism of pyrimidine/purine antagonist with an example. [6]
- Q.5(b) Discuss the anti-metabolite theory proposed by Woods and Fildes and explain the bacteriostatic action of sulfa drugs. [6]
- Q.6(a) What is "Anti-vitamin" effect. Discuss with examples. [6]
- Q.6(b) Discuss the major reason or therapeutic agents are associated with deficiency of Vitamin B and C. [6]
- Q.7(a) Draw a Dengue virus life cycle and suggest the possible site of action for drug or drug candidate. [6]
- Q.7(b) What is binding mode of drug. What type of non-covalent bonds are responsible in drug-receptor interaction. [6]

::::04/12/2019::::E