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

CLASS: BPHARM **SEMESTER : VIII**
BRANCH: PHARMACY **SESSION : SP/19**

SUBJECT PS8405 DRUG DESIGN

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.

Q.1(a)	Define and explain the terms (i) Lead (ii) Competitive Inhibitors (iii) Agonists (iv) Drug Design	[2]
Q.1(b)	Mention and explain the major factors that governs drug design strategies	[4]
Q.1(c)	Describe the concept of lock and key to explain drug receptor interaction studies	[6]
Q.2(a)	What are the importance of physical factors which governs the rational drug design studies	[2]
Q.2(b)	Highlight on (i) Hydrogen bonding (ii) Complexation (iii) Use of surfactants to improve drug action	[4]
Q.2(c)	What are the different route of administration of drug? How ionization plays an important role for absorption of (i) acidic (ii) basic drugs	[6]
Q.3(a)	What are the mportance of receptor in drug research?	[2]
Q.3(b)	Describe and explain drug receptor theories with suitable examples	[4]
Q.3(c)	What are the forces of which allow ligands to bind to the receptors? Explain the binding of acetylcholine to acetylcholine esterase enzyme	[6]
Q.4(a)	Differentiate isosteres from Bioisosters	[2]
Q.4(b)	Discuss in detail Hydride Displacement Theory.	[4]
Q.4(c)	Write a note on examples of bioisosteric replacement influencing metabolism of drug molecules.	[6]
Q.5(a)	Differentiate antimetabolites from enzyme inhibitors	[2]
Q.5(b)	Explain Woods & Fildes theory on Antimetabolites.	[4]
Q.5(c)	Discuss in brief about antimetabolites of purines as therapeutic agents.	[6]
Q.6(a)	Discuss about the hydrophobic descriptor π and describe its mathematical relation with logP	[2]
Q.6(b)	What is the importance of Hansch equation for establishing better therapeutic efficacy of drugs?	[4]
Q.6(c)	What is the importance of molecular modeling softwares to design and develop ligands?	[6]
	Write short notes on:	[2]
Q.7(a)	Ion-channel receptors	
Q.7(b)	GPCR	[4]
Q.7(c)	QSAR and Drug Design	[6]

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