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RF-5379-80

M. Sc. (Part-II) Examination

April / May – 2010

Pharmaceutical Chemistry : Paper - III

(Drug, Metabolism, Pharmaceutical & Pharmacognosy)

Time : **3** Hours] [Total Marks : **70**

RF-5379

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M. Sc. (Part-2)**

Name of the Subject :

☛ **Pharmaceutical Chemistry - 3**

☛ Subject Code No. : **5 3 7 9** ☛ Section No. (1, 2,.....) : **1**

Seat No. :

Student's Signature

(2) Answers to the **two** sections should be written in **separate** answer books.

(3) Figures to the right indicate full marks of the questions.

1 (a) Distinguish endogenous and exogenous compounds Give a brief account of designing a new drug. **12**

(b) Give importance of stereoelectronic structure. Giving example discuss the role of configuration in drug designing process.

(c) What is solvation? Discuss the role of polar and nonpolar solutes affecting the solubility behaviour of drug.

OR

1 (a) What are the objectives of drug design? Discuss them giving examples. **12**

(b) Distinguish configuration and conformational analysis. Discuss the role conformation in drug design with examples.

(c) What is hydrogen bonding? Discuss hydrogen bonding in the solubility behaviour of drugs with examples.

2 (a) What are phase-I reactions? Discuss how they affects the drug metabolism process. **12**

(b) What is stereospecificity? Discuss the role of stereo specific nature of enzyme in drug metabolism process.

(c) What are metabolites? Discuss general metabolic routes for drugs in body and their kinetics.

OR

2 (a) What are phase-II reactions? Discuss how they affects the drug metabolism process. **12**

(b) Enlist the biological factors affecting the drug metabolism. Discuss any one of them giving examples.

(c) Define prodrugs and give a brief account on bioprecursor.

3 (a) What is SAR? Discuss the introduction of methyl group in drug activity by giving illustration. **11**

(b) Give a brief account on Hammet constant σ and its significance.

(c) What is Topliss decision tree concept? Discuss its application in drug design with example.

OR

3 (a) What is QSAR? Discuss how partition co-efficient affects the Drug activity? **11**

(b) Give an account on Taft steric parameter (Es) and its significance.

(c) Discuss the proposal and significance of Hansch theory in structure activity relationship.

RF-5380

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Name of the Examination :

☛ **M. Sc. (Part-2)**

Name of the Subject :

☛ **Pharmaceutical Chemistry - 3**

☛ Subject Code No. : **5 3 8 0** ☛ Section No. (1, 2,.....) : **2**

Seat No. :

Student's Signature

(2) Answers to the **two** sections should be written in **separate** answer books.

(3) Figures to the right indicate full marks of the questions.

4 (a) What is molecular modeling method? Discuss their stick and space fill models and applications based on molecular mechanics approach. **12**

(b) What is the role of combinatorial synthesis in drug discovery and development? Compare the advantages and disadvantages of solid support and solution techniques of combinatorial chemistry.

(c) Explain the tagging method for structural determination of the active compounds.

OR

4 (a) What is docking study? Discuss briefly based on docking study; the binding potential of the ligand to target site. **12**

(b) Discuss solid phase technique used in combinatorial synthesis with suitable example.

(c) Explain with diagram; deconvolution method of screening the active member of library.

5 (a) What is pharmacokinetics? Explain with schematic diagram the therapeutic value of the drug. **12**

(b) What are model systems? Discuss the application of compartment model for drug affinity.

(c) Explain briefly the effect on plasma concentration on administration of single dose of drug.

OR

5 (a) What is ADMET? Discuss the importance of pharmacokinetic in drug development with example. **12**

(b) What is total clearance(CL)? Discuss its application for studying the pharmacokinetic behaviour of drug.

(c) How pharmacokinetic is useful in drug design? Discuss.

6 (a) What do you mean by pharmacognosy? Discuss the therapeutic efficacy of digitalis and arjuna a class of cardiotonic. **11**

(b) Give an account on the important constituent present in pterocarpus and gymnema sylvestris as antidiabatics.

(c) Write a short note on catechu a class of astringents.

OR

6 (a) Explain the scope of pharmacognosy with system of classification; Give an efficiency of guggul and colchicum a class of antirhematics. **11**

(b) Give occurrence, distribution and therapeutic efficacy of antihypertensive drug.

(c) Give short account on vinca a class of antitumor drug.