Exam.Code:0438
Sub. Code: 3487

2071

M.Sc. (Biotechnology) Fourth Semester

MBIO-402: Drug Designing and Drug Delivery

Time allowed: 3 Hours Max. Marks: 80

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

I. Explain the following:

a) Pharmacodynamic

b) Lipinski's rule of five and its significance

c) Molecular Docking

d) Dosage Regimen

e) Drug clearance

f) Noisomes

g) Drug Blinding

h) Osmotic activated drug delivery system (8x2)

UNIT - I

II. (a) Define Drug absorption? Enumerate salient features of various drug transport mechanisms?

(b) What are efflux transporters? Explain their role in drug handling by the body. (8,8)

III. (a) Explain various physico-chemical parameters involved in the study of QSAR.

(b) Write a note on various energy minimization techniques used for CADD. (8,8)

UNIT – II

IV. (a) Explain the concepts of calculation of pharmacokinetic parameters for single dose one compartment model.

(b) Explain significance and application of A.U.C., volume of distribution (Vd) and clearance. (8,8)

V. (a) Write applications of molecular complexes in drug delivery.

(b) Describe the methods to study acute and sub-acute toxicity of drugs. (8,8)

P.T.O.

UNIT – III

VI. (a) Discuss various phases of Drug approval process of FDA.

(b) Explain the importance of dosage form design in pre-clinical and clinical stages. (8,8)

VII. (a) Write note on Clinical trial planning and design.

(b) Write about the techniques and considerations for blinding of drug products. (8,8)

UNIT – IV

VIII. (a) Discuss the role of solubility and partition coefficient in extended release drug formulation.

(b) Explain the concepts and design of rate controlled drug delivery systems. (8,8)

IX. (a) Define liposomes? Enumerate various methods to produce liposomes?

(b) Explain the process of Protein and peptide drug delivery. (8,8)

x-x-x