Total No. of Questions :6]

SEAT No. : ____

P1525

[Total No. of Pages : 3

[5225]-43
M.Sc.
DRUG CHEMISTRY
CH - 463 : Drug Design
(2008 Pattern) (Semester - IV)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections to be written in separate answer books.***
3) ***Figures to the right indicate maximum marks.***

SECTION-I

Q1) a) Explain the terms in brief: **[4]**

i) Monoclonal antibodies

ii) Vectors

iii) Pharmacogenomics

iv) Plasmid

b) Attempt any two of the following: **[10]**

i) Explain the principle of antisense therapy.

ii) Describe applications of recombinant DNA technology.

iii) Give the steps in hybridoma preparation.

Q2) Answer any two of the following: **[12]**

a) Explain the concept of standard deviation as a measure of variation in a data. Also compute the same for the data given below of weight in gms of experimental twice.

152, 184, 164, 149, 150, 148, 170

P.T.O.

b) What is probability of an event? The probability that a particular seed of crop germinates is 0.9. If 7 such seeds are sown, find the probability that

i) exactly 5 will germinate

ii) less than 2 will germinate

c) Compute Karl Pearsons coefficient of correlation between

X: Production (in Quintals) & Y: price of wheat in Rs. for 5 reigons of state

X: 1450 1575 1890 2005 1984

Y: 1880 1850 1900 1750 1800

Q3) Answer any two of the following: **[14]**

a) Discuss in brief the development of combinatorial chemistry as a modern tool for drug discovery. Explain the various ways the libraries are synthesised.

b) Explain with proper examples how prodrugs have enabled the following

i) Improved oral absorption

ii) Improved target selectivity

iii) Reduced toxic effect

iv) Improved taste

c) What are the fractions of the cell membrane? Draw a schematic diagram & explain how these are performed?

SECTION - II

Q4) Answer any three of the following: **[18]**

a) Explain QSAR? What are the physicochemical parameters normally correlated with biological activity? What is the significance of statistical terms like s,r,t test? Explain.

b) Explain in brief how molecular mechanics is used in calculating the energy of a system.

c) Discuss

i) Molecular Electrostatic potentials

ii) Quantum mechanics

iii) Monte Carlo search

d) Explain

i) Hansch Analysis

ii) Free Wilson Analysis

Q5) Answer any two of the following: **[12]**

a) Discuss in brief docking method & virtual screening.

b) Explain Tepliss decision tree & batch Analysis.

c) Discuss structure based drug design.

Q6) Discuss any two of the following. **[10]**

a) G - Protein Coupled Receptors

b) 3D QSAR

c) Bioinformation & Drug designing

d) Conformational Analysis.