Roll No.: ....

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PK-382

M.Sc. IV Semester Biotechnology (Reg./ATKT) Examination June 2018

PRINCIPLES OF DRUGS DESIGNING

Paper - III

Time Allowed : Three Hours]   *[Maximum Marks : 85*

Note : Attempt all questions.

Section - A

Objective Type Questions

Q.1. Choose the correct answer: $10 \times 1\frac{1}{2} = 15$

i) Which of the intermolecular bonding interactions below are possible for an alcohol?

  (a) Hydrogen bonding only

  (b) Van der Waals interactions

  (c) Ionic bonding only

(2)

ii) Which of the following functional groups is most likely to participate in a dipole-dipole interaction?

  (a) Ketone

  (b) Alkene

  (c) Alcohol

  (d) Aromatic ring

iii) Antibonding molecules orbitals are produced by

  (a) Constructive interaction of atomic orbitals

  (b) Destructive interaction of atomic orbitals

  (c) Overlap of a atomic orbitals of two negative ions

  (d) All of these

iv) QSAR method involves

  (a) Target structures

  (b) Target properties

  (c) Ligand x-ray structure

  (d) Ligand properties

(3)

v) How many molecular orbitals may be constructed from the valence shell orbitals of the constituent atoms in CH_4

    (a) 7   (b) 8

    (c) 4   (d) 6

vi) Which of the following software programme is used for automated de novo drug design.

    (a) DOCK

    (b) LUDI

    (c) CHEM3D

    (d) COMFA

vii) Which of the following drugs was not isolated from a natural source.

    (a) Quinine

    (b) Morphine

    (c) Isoniazid

    (d) Artemisinin

viii) Which of the following is not a endogenous lead compound

    (a) Neurotransmitter

    (b) Alkaloid

    (c) Hormone

    (d) Modulator

(4)

ix) What is the term used for small molecules that bind to different regions of a binding site.

    (a) Epimers

    (b) Isomers

    (c) Isotopes

    (d) Epitopes

x) One of the following is a quantum chemical parameter

    (a) Traft constant

    (b) Hammett's constant

    (c) STERIMOC

    (d) Highest occupied molecule orbital

Section - B

Short Answer Type Questions

$$5 \times 4 = 20$$

Q.2. Explain biochemical and molecular level screening system in drug discovery.

OR

What are the preclinical developments in drug discovery procedures.

Q.3. Explain statistical concept of QSAR.

OR

(5)

Explain applications of QSAR models with examples.

Q.4. Explain force field.

OR

Which are the molecular graphics and modelling tools.

Q.5. Explain the structure construction methods used in drug designing.

OR

Describe the analysis of molecular field.

Q.6. How synthetic peptide libraries are developed?

OR

Explain the receptor in molecular interaction and role of solvent.

Section - C

Long Answer Type Questions

$5 \times 10 = 50$

Q.7. Explain strategies in lead identification and optimization with examples.

OR

(6)

Describe procedure followed in clinical trail and patenting.

Q.8. Describe different parameter used in QSAR models and its application in drug designing.

OR

Explain binding and actuation activity of receptors in drug action.

Q.9. Explain the working of molecular graphic & modelling method adopted for geometry optimization.

OR

Discuss perturbation free energy and force field with their importance in structure designing.

Q.10. How does 3D database is used in drug designing and explain the scope of automated structure construction method.

OR

How drug discovery is done and explain the advantages of computer Aided drug designing own rationale methods.

(7)

Q.11. Explain synthetic vaccine designing and application of mapping technique with reference to peptide libraries.

OR

Illustrate with example hydrolases, PLP enzyme isomerase and ledox inhibitors.

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