

Name :

Roll No. :

Invigilator's Signature :

CS/M.TECH(BT)/SEM-3/MBT-315D/2012-13

2012

PHARMACEUTICAL BIOTECHNOLOGY

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

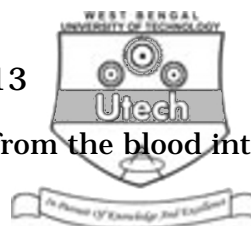
GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

- i) The following are excreted faster in basic urine
 - a) Weak acids
 - b) Strong acids
 - c) Weak Bases
 - d) None of these.
- ii) Most drug receptors are
 - a) Small molecules with a molecular weight between 100 and 1000
 - b) Lipids arranged in a bilayer configuration
 - c) Proteins located on cell membranes or in the cytosol
 - d) DNA molecules.



- iii) With regard to distribution of a drug from the blood into tissues
- a) Blood flow to the tissue is an important determinant
 - b) Solubility of the drug in the tissue is an important determinant
 - c) Concentration of the drug in the blood is an important determinant
 - d) All of the above are important determinants.
- iv) Pharmacodynamics considers
- a) The way in which the body affects the drug
 - b) The effects of the drug on the body and the mode of drug action
 - c) Drug metabolism
 - d) None of these.
- v) A drug that binds to a cell receptor and causes a response is called an
- a) Agonist
 - b) Antagonist
 - c) Receptor blocker
 - d) Both (a) & (b).
- vi) When a drug has a low therapeutic index, that drug should be
- a) used mostly orally
 - b) used mostly intravenously
 - c) considered a potentially toxic substance
 - d) Given only in submilligram doses.



- vii) Most drugs and metabolites are excreted by
- The kidneys
 - The bile
 - The lungs
 - Perspiration, saliva and tears.
- viii) The duration of action of a drug is dependent of its
- plasma and tissue binding
 - metabolism
 - tubular filtration and secretion
 - all of these.
- ix) When two drugs with the same effect produce an effect greater than the sum of the effects of individual drugs [$1 + 1 > 2$]; such an effect is called
- Additive effect
 - Synergism
 - Potentiation
 - None of these.
- x) Addition of oxygen or negatively charged radical and removal of hydrogen or positively charged radical is known as
- Reduction
 - Oxidation
 - Acetylation
 - Hydrolysis.
- xi) DNA vaccine can elicit
- Cell mediated immunity
 - Humoral immunity
 - Both cell mediated & humoral immunity
 - None of these.



GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. "Enzymes appear in the plasma by 3 different mechanisms". Explain.
3. What is CADD ? Discuss with example.
4. Schematically describe the principle of biosensor.
5. What is toxicogenomics ?
6. Gene therapy and its application.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. What is QSAR ? Explain Hammett equation and Hansch analysis in connection with QSAR and drug design. $3 + 12$
8. a) Discuss the factors affecting drug absorption.
b) Describe the two types of carrier - mediated transport mechanisms. $2 + 13$
9. What do you mean by Phase I & Phase II metabolism of drug ? Discuss on glucuronidation & sulfation of drug metabolism. $5 + 10$
10. Discuss the concepts involved in new generation vaccines. 15
11. Discuss the concepts involved for production of Monoclonal antibodies. 15

