

3 Hours

Total Marks: 100

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labeled diagrams wherever necessary.
4. Use of log tables and non-programmable calculator is allowed.

Q.1 a. Answer the following objective questions as directed: (Any Six)

06

1. Define: Drug potency
2. What are 'endorphins'?
3. Give the pharmacological term used for the ratio of LD_{50}/ED_{50} .
4. Give the pharmacological term used for : A chemical that interacts with a specific receptor and initiates desired cellular action.
5. Fill in the blank:
_____ is a complete dose response curve in a single animal.
6. Fill in the blank:
Activation of kinases by cAMP leads to _____ of specific proteins involved in the drug response. (neutralization/ phosphorylation).
7. State True or False:
Reversible competitive antagonism is also termed as nonequilibrium competitive antagonism.
8. State True or false:
The maximum biological effect that can be induced by a drug depends on its intrinsic activity.
9. What is 'agonist'?

Q.1 b. Explain the following questions: (Any Two)

14

1. Different types of drug antagonism with suitable examples.
2. Drug-receptor interaction has effect on biological response and efficacy of a drug.
3. Parameters used to quantify drug dose-response relationship among many individuals in a population.

Q.2 a. Do as directed: (Any Six)

06

1. State True or False:
Lipid-water partition coefficient is defined as the ratio of the concentration of the drug in two immiscible phases.

2. State True or False:
A drug is said to be absorbed only when it has entered the blood or lymph capillaries.
3. State True or False:
Rectally administered drug, at least in part, escapes hepatic first pass metabolism.
4. What do you mean by bulk flow?
5. Name the part of small intestine in humans where maximum drug is absorbed.
6. Name the efflux transporter protein involved in placental barrier.
7. Name any one physiological factor which decreases gastric emptying time.
8. Fill in the blank:
_____ retrovirus infection is due to the intravenous administration through contaminated needles.
9. Fill in the blank:
_____ enzymes are drug metabolising enzymes which have an active role in drug absorption.

Q.2 b. Discuss the following questions: (Any Two)

14

1. Absorption of drugs in oral cavity, sublingual absorption and stomach.
2. "Transfer of drugs into the brain is regulated by the blood brain barrier".
3. Role of albumin, lipoprotein and α_1 -AGP in drug binding.

Q.3 a. Do as instructed: (Any Six)

06

1. What is risk assessment?
2. What is meant by Adverse Drug Reaction?
3. Give one example of drug used for torture.
4. Give one example of a drug used by drug addicts.
5. What is meant by "Crack"?
6. What is the main role of OSHA?
7. Fill in the blank
The condition used to describe the damage some children suffer when mothers drink during pregnancy is called as _____.
8. State True or False:
A descriptive toxicologist is concerned directly with toxicity testing, which provides information for safety evaluation and regulatory requirements.
9. State True or False:

Anaphylactic shock, if left untreated, can be fatal.

Q.3 b. Answer the following questions: (Any Two)

14

1. Discuss the degrees of certainty for attributing adverse reactions to drugs.
2. Explain the adverse effects of drugs on the growing embryo and foetus.
3. Describe cyanide poisoning and its treatment.

Q.4 a. Attempt the following questions as instructed: (Any Six)

06

1. Write any one function associated with medulla oblongata of brain.
2. What are Neuromodulators?
3. Define Electric synapses.
4. Define Catecholamine.
5. Define Synapse.
6. What do you mean by Saltatory conduction.
7. Write any one effect of Saxitoxin on Na^+ channels.
8. Name the protein abundant in peripheral nerve myelin.
9. Name any one protein involve in membrane fusion in synaptic vesicle cycle.

Q.4 b. Answer the following questions: (Any Two)

14

1. Briefly explain synaptic vesicle cycle with diagram.
2. Briefly discuss Neurotransmitters.
3. Explain propagation of nerve impulses.

Q.5 Write Short notes on the following: (Any four)

20

- a. Measurement of drug safety.
- b. Factors influencing drug distribution.
- c. Sodium ion channels of neurons.
- d. Pseudo-allergic reactions.
- e. Poisoning by biological substances.
- f. Neurotoxins.
