

Sardar Patel University
M. Sc. Int. Biotechnology, Ninth Semester Examination
Wednesday, 19th October, 2016
10:00 a.m. - 01:00 p.m.
PS09CIGMB2: ADME & Toxicology

Note:

Total Marks: 70.

1. Figures to the right indicate marks.
2. Draw neat and labeled diagram, wherever necessary.

Q-1 Attempt the following

[08 X 01 =08]

1. _____ is probably a poor model for studying the chronic toxicity of any new non-steroidal anti-inflammatory drug (NSAID)
a) Rat b) Mouse c) Rabbit d) Guinea pig
2. _____ reduces the activity of receptors by inhibiting their constitutive activity.
a) Antagonists b) Inverse agonists c) Agonists d) None
3. Transdermal patches consist of _____.
a) Histidine b) Isosorbitol c) Estradiol d) All
4. _____ are the carrier for zoonotic diseases
a) Vector b) Fomite c) Genes d) All
5. The therapeutic index is usually defined as
a) TD_{50}/LD_{50} b) TD_{50}/ED_{50} c) LD_{50}/ED_{50} d) ED_{50}/LD_{50}
6. Which of the following points are used for drug evaluation in Dose-response curves?
a) Where no effect occurs or detectable
b) The threshold dose of the substance
c) The levels at which the effect occurs in a set percentage
d) All of the above
7. With regard to clinical trials of new drugs, which of the following is most correct?
a) Phase I involves the study of a small number of normal volunteers by highly trained clinical pharmacologists.
b) Phase II involves the use of the new drug in a large number of patients (100-5000) who have the disease to be treated.
c) Phase III involves the determination of the drug's therapeutic index by the cautious induction of toxicity.
d) Chemical antagonist.
8. A patient receives long-term, high-dose therapy with a sulfonamide. After approximately 3 weeks of therapy, the patient has a low-grade fever, rash, and muscle and joint pain. Which type of hypersensitivity accounts for these symptoms?
a) Type I b) Type II c) Type III d) Type IV

Q-2 Answer the following questions (**Any seven**). [07 X 02 = 14]

1. Enlist genetic effect of inbreeding.
2. Draw scheme of barrier facility for breeding research.
3. Give limitations of oral route of drug administration.
4. Define ORPHAN receptors.
5. What is inbreeding?
6. Explain NOAEL.
7. What is therapeutic equivalence?
8. Write conditions for test systems.
9. Discuss the quantitative features of hormetic dose response.

Q-3 (A) Enlist different methods of euthanasia and discuss the characteristics of any one in detail. [06]
(B) Give a brief account on pharmacokinetics. [06]

OR

(B) Explain out-breeding method in detail. [06]

Q-4 (A) Explain transmembrane signaling mechanisms in detail. [06]
(B) Write notes on any two of the following: [06]
a) Binding of drugs to plasma proteins b) First pass effect

OR

(B) Discuss the mechanisms of secondary messengers. [06]

Q5 (A) Explain the toxins of different insects and its effects on humans. [06]
(B) How skin absorbs toxicants and shows its effects? [06]

OR

(B) Discuss the most important route and mechanism of excretion of toxicants from the body. [06]

Q6 (A) Discuss the method of chronic and sub-chronic toxicity testing. [06]
(B) Explain the dose response curve and threshold limitations in drug toxicity testing. [06]

OR

(B) Giving suitable example, determine the maximum recommended starting dose for clinical trials [06]

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