

[88]

SARDAR PATEL UNIVERSITY  
M.Sc. II<sup>nd</sup> Semester Examination  
Wednesday, Date: 11 -04-2018  
Time 2:00 p.m. to 5:00 p.m.  
Subject /Course Code PS 02 CBIC 22  
Subject/Course Title: Toxicology

Max Marks : 70  
(08 marks)

Q.1 Choose the most correct answer and write in the answer sheet.

1. The biotransformation of a foreign chemical in the body is determined by  
(a) it's structure (c) its physicochemical properties  
(b) availability of enzymes (d) all of the above
2. The metabolism of toxicants in the body primarily results into  
(a) increase in its molecular weight (c) becoming more polar compound  
(b) increase in its excretion (d) all of the above
3. Which of the following effects of two substances are important in the action of antidotes  
(a) Potentiation (c) Synergism  
(b) Anatagonism (d) Coalitive effect
4. Which of the following toxicants causes rapid lethality by affecting cytochrome aa3 in the mitochondria  
(a) Paracetamol (c) Carbon monoxide  
(b) Cyanide (d) Cycasin
5. What type of specificity is shown by CYP enzymes in the SER of liver cells  
(a) Absolute (c) Steriospecific  
(b) Broad (d) none of the above
6. Accumulation of dangerously high levels of toxins inside the cells is termed as  
(a) Biomagnification (c) Persistent organic polutant  
(b) Synergism (d) Bioaccumulation
7. Which compounds combine with the atmosphere to form acid rain  
(a) Ozone (c) Sulfur oxide  
(b) CFC (d) all of the above
8. Minamata disease is a result of chronic toxicity by one of the following heavy metals  
(a) Mercury (c) cadmium  
(b) Lead (d) arsenic

(P. T. O.)

Q.2 Answer ANY SEVEN of the following questions in brief:

(7x2=14)

1. Differentiate between toxicokinetics and toxicodynamics.
2. Briefly explain biochemical aspects of toxicology
3. What are antidotes? Cite any two examples.
4. If nicotine has LD50 of 1 mg/kg body weight and botulinum toxin has LD50 of 0.00001, which is more toxic and how many times?
5. What is the application of Ames test?
6. Give examples of any four compounds that are used for conjugation in Phase II reactions.
7. Define the term – biological half life.
8. What is meant by Chinese restaurant syndrome?
9. Mention few uses of asbestos.

Q.3 (a) Differentiate between LD 50 and ED 50. Also explain why LD50 is largely replaced with determination of ED 50? (06)

(b) Give examples and differentiate between toxicants that cause rapid lethality against those toxicants, which have slower action. (06)

OR

(b) Explain the metabolism and chronic toxicity due to over dosage of paracetamol drug. (06)

Q.4 (a) What is first pass metabolism, is it a part of toxicokinetics or toxicodynamics? Give any two examples of Phase I and Phase II reactions each. (06)

(b) Give an account on role of Cytochrome P-450 oxidase enzymes in xenobiotic metabolism. (06)

OR

(b) What is Genotoxicity? Explain in brief any two test of genotoxicity. (06)

Q.5 (a) Write a brief account on mode of action of fungicides and herbicides. (06)

(b) Write a note on organophosphates and carbamates. (06)

OR

(b) Explain the needs of food additives. (06)

Q.6 (a) Write an account on cadmium toxicity. (06)

(b) Explain the environmental consequences of sulfur dioxide. (06)

OR

(b) Explain the adverse effects of asbestos. (06)

-----X-----