

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

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SARDAR PATEL UNIVERSITY

M.Sc Biochemistry, II Semester

Wednesday, Date: 11 - 04 - 2018

Time 2.00 p.m. to 5.00 p.m.

Subject /Course Code PS 02 CBIC 02

Subject/Course Title: Biochemical & Environmental Toxicology

Max Marks : 70

Q.1 Choose the most correct answer for the following questions.

(08 marks)

- The toxic effect of a toxicant is affected by  
(a) Dose of toxicant (b) frequency of exposure (c) route of exposure (d) all of the above
- A low LD<sub>50</sub> indicates  
(a) a high toxicity (b) a low toxicity (c) that a compound is not harmful (d) none of the above
- Exposure to low amounts of toxicant over a long period of time is  
(a) chronic exposure (b) acute exposure (c) easier to detect (d) sub-acute exposure
- Biomagnification is \_\_\_\_\_  
(a) is the increase in toxicant as one moves up the food chain  
(b) is the accumulation of toxicants in individual organisms in an ecosystem  
(c) does not occur in natural population  
(d) none of the above
- Which is the best antidote for paracetamol toxicity?  
(a) Sodium bicarbonate (b) N-acetyl cysteine (c) Glutathione (d) Glucose
- Cycasin (methyl azoxy methanol glycoside) is a potent carcinogen only if it is exposed by  
(a) Nasal route (b) Dermal route (c) Oral route (d) any route
- Which of the following molecules can be used for phase II conjugation reactions  
(a) amino acids (b) glutathione (c) sulphate (d) all of the above
- One of the following statement is not based on the assumptions of dose-response relationship:  
(a) That the toxic response is a function of the concentration of the compound at the site of action  
(b) That the concentration at the site of action is related to the dose  
(c) That the response is not causally related to the compound given  
(d) None of these

(P.T.O.)

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

(7x2=14)

1. How can we determine NOEL and maximum toxicity of a toxicant?
2. What is first pass metabolism? Where does it occur?
3. Name the model organisms that are studied for toxicity testing and research.
4. Differentiate between toxicokinetics and toxicodynamics.
5. What is the application of finding antagonist of toxicant?
6. Which antidotes are used to treat lead poisoning?
7. What is 'risk assessment' in reference to toxicity?
8. Why is cycasin (methyl azoxymethanol glycoside) is carcinogenic only when exposed by certain route?
9. What is the significance of determining therapeutic index of drug?

Q.3 (a) Explain Dose-response relationship and its importance. (06)

(b) Explain the toxicity that occur due to overdosage of paracetamol. (06)

OR

(b) Give examples and explain acute and chronic toxicity. (06)

Q.4 (a) Explain division of different phases in toxicants' metabolism. (06)

(b) What is Ames test? Explain. (06)

OR

(b) Give suitable examples and describe phase II reactions of biotransformation of xenobiotics. (06)

Q.5 (a) Explain the environmental implications of acid rain. (06)

(b) Explain the toxicity of organophosphorous insecticides with suitable examples. (06)

OR

(b) Write an explanatory note on toxicology of food additives. (06)

Q.6 (a) Write an explanatory note on common air pollutants and their effect on environment. (06)

(b) State the environmental fate of persistent xenobiotics like pesticides. (06)

OR

(b) Explain the causes and symptoms of arsenic poisoning. (06)

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