

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1761

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Unique Paper Code : 3182013603

Name of the Paper : Toxicology

Name of the Course : **B.Sc. (H) Biomedical Science (NEP)**

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Question No. **1** is compulsory.
4. Subparts of the questions should be attempted together.

Q1.A. Define:

5 X 2= 10 marks

- i. Tolerance
- ii. Soft Electrophiles
- iii. Mutagen
- iv. Oxygenation Reactions
- v. COD

B. State True/ False. Justify your answer.

5 X 3=15 marks

- i. A synergistic effect is observed when the combined responses of two chemicals are equal to the sum of the responses to each chemical when given alone.
- ii. Paracelsus gave contributions in Forensic Toxicology.
- iii. In a dose response curve, the value of LOAEL is less than NOAEL.
- iv. Cyanide is toxic, mainly because it binds to heme in haemoglobin.
- v. Administering antidotes is the first line of therapy in case of poisoning.

C. Provide the basic reaction catalyzed by following enzymes:

2 X 2.5= 5 marks

- i. Superoxide dismutase
- ii. Catalase

Q2. Match the toxicants with their main toxic effect and provide mechanism of toxicity.

Toxicant	Toxic Effect
Organophosphates	Hematotoxicity
Bipyridyl compounds	Nephrotoxicity
Carbon tetrachloride	Respiratory Toxicity
Ethylene Glycol	Neurotoxicity
Warfarin	Hepatotoxicity

5 X 3 = 15 marks

P.T.O.

- Q3 A.** Provide the effects of mercury on aquatic ecosystems. Explain the movement of toxicants in the food chain and resulting human toxicity. **5 marks**
- B.** Discuss various types of dose response relationships. Discuss the significance of dose response curves in toxicology. **7 marks**
- C.** The process of distribution can affect the toxicity of a toxicant. Discuss with suitable example. **3 marks**
- Q4. A.** How does the polarity of toxicants affect their excretion? Discuss with suitable examples. **5 marks**
- B.** Oxidation biotransformation reactions sometimes can generate reactive metabolite of toxicants. Explain with two suitable examples. **5 marks**
- C.** Provide various situations of exposure to lead and its toxicokinetics. **5 marks**
- Q5. A.** Discuss roles of following enzyme cofactors in toxicology with one suitable example. **3 X 4=12 marks**
- i. Heme
 - ii. Glutathione
 - iii. S-Adenosyl Methionine
- B.** Discuss various factors affecting absorption of toxicants from lungs. **3 marks**
- Q6. Short notes:** **3 X 5=15 marks**
- i. Various sub-disciplines of toxicology and their scopes
 - ii. Physical examination of poisoned patient
 - iii. Main routes of toxic exposure with examples