

2018

BIOTECHNOLOGY

BIT 305

TOXICOLOGY

Full Marks: 80

Time: 3 hours

The figures in the margin indicates full marks for the questions :

1. Answer in short to the following: 1x10=10
- a. Who is the author of *A textbook of Toxicology*?
 - b. Who is regarded as the father of Toxicology?
 - c. Name the main anthropogenic source of NO_x .
 - d. What are physical poisons?
 - e. Define translocation of toxicants.
 - f. Fill in with appropriate words-
“The minimal effective dose of any toxicant which evokes a response is called _____ and the organisms responding at lower doses are termed as _____ whereas those responding at higher doses as _____.”
 - g. What are anatagonists with respect to toxicant-receptor complex?
 - h. What are the ions responsible for conduction of nerve impulse along a nerve axon?
 - i. What is methemoglobin?

- j. Define cytostatic action.
2. What are food additives and food contaminants? How do they differ from each other? 2
3. Write the effects of lead poisoning. 2
4. How do industrial effluent contaminate water resources? 2
5. What is thermal pollution? Write its common sources. 2
6. What is enzyme inhibition by toxicant molecule? Cite an example. 2
7. Write short notes on *any four* from the following: 5x4=20
- Hypersensitivity and allergy caused by toxicant molecule
 - Mechanism of DDT poisoning
 - Renal elimination of toxicants
 - Types of interaction between toxicant and receptor.
 - Drugs of Abuse
 - Therapeutic index
8. Answer *any four* from the following: 10x4=40
- Give an account on the toxic effects of toxicants caused through- 5+5=10
 - Blockade of Oxygen transport.
 - Interference in the synthesis and functions of nucleic acids and proteins.
 - Explain in brief the impact caused by pesticides on the biotic environment. 10

- c. Give a brief account on the factors affecting toxicity of toxicant molecules. 10
- d. What are acute toxicity tests? What are the basic characteristics of the organisms selected for toxicity test? Outline in brief about aquatic toxicity test. 2+3+5=10
- e. What is MATC and what is its relation with respect to NOEC and LOEC? What is behavioural tests? What are its criteria? 5+5=10
- f. Describe teratogenesis. Write the characteristics and mechanism of teratogenesis. 10
