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SEAT No. _____

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(460)

SARDAR PATEL UNIVERSITY
M. Sc. -Integrated Biotechnology – Eighth Semester Examination
Monday, 25th March 2019
Time: 02:00 pm to 05:00 pm
PS08CIGEB3: Environmental Toxicology

Total Marks – 70
[08]

Q.1 Mark the right answer of following questions.

1. Dimethyl sulfate is an example of _____.
a. Synthetic carcinogen requires activation c. Primary carcinogen doesn't require activation
b. Precarcinogen doesn't require activation d. Natural carcinogen doesn't require activation
2. A substance that acts as a poison to human or wildlife is known as _____.
a. Allergens b. Toxicants c. Persistent compound d. Pollutants e. All of these
3. Aflatoxins are natural toxins produce from _____.
a. Animal b. Bacteria c. Fungi d. Protozoan e. Algae f. Snake
4. Acids are _____ in nature.
a. Corrosive b. Flammable c. Volatile d. Non-volatile e. None of these
5. From the following, _____ chemical agent is comparatively less toxic.
a. Electrophilic species b. Free radicals c. Arsenic d. Nucleophilic species
6. Bio-transfer factor (BCF) = _____.
a. Concentration in tissue / daily uptake c. Daily uptake / concentration in soil
b. Concentration in soil / daily uptake d. Concentration in tissue / concentration in soil
7. Dinoseb are the most hazardous organo _____ compound.
a. Oxygen b. Chloro c. Phosphorus d. Nitrogen e. Sulfur
8. Overexpression of proto-oncogene is an example of _____ stage of carcinogenesis.
a. Initiation b. Promotion c. Progression d. Metastasis e. Tumor angiogenesis

Q.2 Answer the following questions. (ANY SEVEN OUT OF NINE)

[14]

1. Enlist insect toxins and write mode of action of it.
2. Define toxicological chemistry and write its significance.
3. Write examples of different groups of carcinogens with suitable examples.
4. Write an example of acetylation of phase II reactions.
5. Define carbamates and write suitable examples of it.
6. Write adverse effects of mercury in brief.
7. Explain characteristics of heavy metals. Write physiological role of metal in living organism.
8. Write metabolic pathways of formaldehyde and methanol toxicity.
9. Explain modes of transfer of toxicants.

①

(P.T.O.)

- Q.3 A. Describe different classes of toxic agents with appropriate examples in detail. [06]
B. Write a note on risk assessment and hazard assessment of toxic agent. [06]

OR

- B. What are the sources of toxicants? Explain various toxicity influencing factors of toxic substances. [06]

- Q.4 A. Write examples of toxic organo-oxygen compounds. Explain different types of acids and its related toxicity. [06]

- B. Write short notes on: 1) Plant toxins 2) Mycotoxins [06]

OR

- B. Give a brief account on pesticidal toxicants. [06]

- Q.5 A. Write short notes on: 1) Biochemical mechanism of toxicity. [06]
2) Biodegradation of toxicants.

- B. Describe conjugation of toxicants by glutathione, sulfate and amino acids. [06]

OR

- B. Summarize different examples of modification of toxic substances by phase I oxidation reactions. [06]

- Q.6 A. Illustrate the process of carcinogenesis. [06]

- B. Write short notes on: 1) DNA methylation. [03]
2) Adverse effects of UV radiation. [03]

OR

- B. Write sources, human exposure and toxicity of arsenic and lead heavy metal ions. [06]