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SARDAR PATEL UNIVERSITY**M. Sc. -Integrated Biotechnology – Eighth Semester Examination****Monday, 16th April 2018****Time: 02:00 pm to 05:00 pm****PS08CIGEB3: Environmental Toxicology****Total Marks – 70****Q.1 Mark the right answer of following questions. [08]**

1. _____ toxicology connected between toxic substance and illness associated with them.
Forensic b. General c. Environmental d. Clinical e. Non-kinetic
2. _____ ultra violet radiation absorbing pigment is produce by lichens.
a. Scytonemin b. Mycosporine c. Flavonoids d. Melanin e. Parietin
3. The concept of bioconcentration is most applicable to those substances which are _____.
a. Metabolize slowly or not at all c. Relatively high/more water soluble
b. Relatively low water soluble d. All of these
4. Methanol undergo metabolic oxidation to formic acid which has major effects on _____.
a. Central nervous system b. Retina c. Optic nerve d. a & b e. All of these
5. Leafy vegetables, mushrooms, shell fish and cocoa powder are the sources of _____ non-essential metal ion.
a. Chromium b. Arsenic c. Cadmium d. Lead e. Mercury
6. Oxidation of Parathion to Paraxon is an example of _____.
a. Oxidation of Nitrogen c. Oxidation of phosphorus
b. Oxidative desulfuration d. Oxidation of carbon
7. From the following which endogenous metal ion can be toxic to brain at higher level?
a. Selenium b. Sodium c. Chromium d. Helium e. Vanadium f. Potassium
8. _____ nerve toxin is produced by plants, causes a variety of central nervous effects.
a. Ricin b. Taxol c. Coniine d. Psilocybin e. Aflatoxin

Q.2 Answer the following questions. (ANY SEVEN OUT OF NINE)**[14]**

1. Define acute and chronic toxicity with appropriate examples.
2. Explain synergism, potentiation and antagonism with respect to toxic response.
3. List categories of toxic substances with specific examples.
4. Define epigenetics. Write examples of epigenetic pathways.
5. Explain response to toxicants at different organizational level.
6. Define vascular toxins. Give examples and sources of any two toxins.
7. Draw structure of cyclic amines. Explain their main toxicological characteristics.
8. Discuss mechanism of lead toxicity.
9. Define co-metabolism and bio-magnification with specific examples.

C.P.T.O.)

- Q.3** A. Write short notes on: 1) Dose-response relationships [06]
2) Factors influencing toxicity
- B. List & discuss the major routes and sites of exposure, distribution & elimination of toxicants in the body. [06]
- OR**
- B. What is kinetic and non-kinetic toxicology? Summarize risk assessment methodologies of toxic substances with specific examples. [06]
- Q.4** A. Describe toxicological effects of methanol, ethanol and higher alcohols. [06]
B. What is chronic toxicology? Outline toxic effects of mycotoxins and plant toxins. [06]
- OR**
- B. What is dinoseb? Explain mode of action and toxicological effects of nitriles, nitro compounds and nitrosamines. [06]
- Q.5** A. Explain general factors of biodegradation, biomarkers and transfer of toxicants to organisms. [06]
B. Why phase II reactions are also known as conjugation reactions? Describe conjugation by sulfate, glutathione and methylation of phase II reaction. [06]
- OR**
- B. What is Phase I reactions? Outline epoxidation hydration, alcohol dehydrogenation and oxidation of non-carbon element of phase I reaction. [06]
- Q.6** A. Summarize all the three stages of carcinogenesis. [06]
B. Illustrate DNA methylation and histone modification. [06]
- OR**
- B. Write short notes on: 1) Effects of UV B radiation on human [06]
2) Mechanisms of cadmium and arsenic toxicity

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