Parvatibai Chowgule College of Arts and Science
Autonomous
B.Sc. Online Semester End Examination, January/February 2022

Semester: 3
Subject: Zoology
Paper: Environmental Toxicology (Elective)
Duration: 2 Hours   Max. Marks: 45

Instructions: *1. All questions are compulsory*
2. Figures to the right indicate full marks
3. Draw diagrams wherever necessary

Q.1. Answer __ANY THREE__ of the following: **(09)**

a) Toxicant such as DDT which is used as a pesticide in field is found to cause harmful effects in vultures. Explain the how the toxicant is able to move from crop to vultures.

b) A man was arrested for selling Lysergic acid diethylamide. During interrogation he was found to be delusional and incoherent. Identify the category of toxicant it belongs to. Explain why the man is displaying these symptoms. What will be the chronic effects on the health of a man?

c) A woman experienced scorching heat to the skin on eating toxic fish obtained from reef. It was found that consumption of these fish resulted in symptoms like paraesthesia and reversal of thermal sensation. Identify and explain the type of toxin and its effect. What measures can be taken to treat the toxic effect?

d) In the toxicology lab, a man was performing an experiment on a chemical possessed carcinogenic property. What are the different test he could perform to determine the toxicity of the substance?

Q.2. Answer <u>ANY TWO</u> of the following: (12)

a) A pregnant lady was advice to limit or avoid the fish consumption like shark and king mackerel due to mercury buildup. Identify and explain the process. Compare the process with bioaccumulation. Explain how the above process affect pregnant woman? Add a note on its effect on the environment.

b) Ram working at construction site is recently diagnosed with lung cancer. Due to the above condition he is unable to complete insulation and roofing of the house. Write a note on the toxicant that is responsible for Rams cancer. Explain in brief other occupational toxicants which are responsible in causing severe damage to human health.

c) Toxic shock syndrome can be caused due to prolonged use of Tampons. This can result in severe symptoms and sometimes even death. Identify and explain the type of toxin that causes these effects. Enlist and differentiate, different toxins produced by these organisms.

Q.3. Answer <u>ANY TWO</u> of the following: (12)

a) A farmer prefers to use manure instead of fertilizers. Justify. What are the different components that affect the quality of soil? Enlist and explain various majors taken to preserve soil quality.

b) A child was diagnosed with damaged nervous system along with severe anemia. His parents complained to the doctor that he was often found nibbling on the paint chippings from the wall. Identify the toxicant and explain what other effects it might have on child. Write a note on its sources and mode of action. Add a note on its treatment.

c) People from certain parts of Japan were found to be suffering from acquired Fanconi Syndrome. The disease was caused due to heavy metal contamination in the paddy fields. Identify the disease and explain its cause. Describe the mode of action of the toxicant. Add a note on its treatment.

Q.4. Answer <u>ANY ONE</u> of the following: (12)

X) Seema noticed many unfamiliar ingredients listed on the packet of instant noodles. With the help of the picture given below, identify and explain various categories of the listed ingredients. Write a note of its toxic effects on the health of the individual. Add a short note on how packaged food differs from homemade food.

OR

Y)

(i) A girl attempted suicide with the help of a chemical "A" which was used by her father to kill unwanted plants in the garden. Identify and describe the type of toxicant she has consumed. Explain the mode of action of "A" as a toxicant. What possible treatment can be given to the girl to save her life.

(ii) Use of Parathion should be monitored correctly. Justify. Identify and explain the category it belongs to. Compare it with Mancozeb with respect to its mode of action?

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