REV-01
MSC/01/05

2025/06

SET A

M.Sc. CHEMISTRY
FOURTH SEMESTER
RAISING RURAL AWARENESS-
CHEMICAL HAZARDS IN SOIL & WATER
MSC – 405 CCEC [REPEAT]

[USE OMR FOR OBJECTIVE PART]

Duration: 1:30 hrs. **Full Marks: 35**

Objective

Time: 15 mins. **Marks: 10**

Choose the correct answer from the following: ***1×10=10***

1. Which of these pollutants is an insecticide?
   a. Pyrethrum
   b. Aliphatic acids
   c. Thiocarbamates
   d. Amides

2. What is a potential consequence of the accumulation of toxins in the food chain?
   a. Increased overall health and well-being
   b. Negative impacts on human health, including increased risk of cancer and other illnesses
   c. No impact on human health
   d. Positive impacts on human health, including decreased risk of cancer and other illnesses

3. The Minamata disease is related to -
   a. Hg poisoning
   b. Cd poisoning
   c. As poisoning
   d. None of the above

4. Which of the following is a major health risk caused by chemical contaminants in rural water sources?
   a. Skin tanning
   b. Gastrointestinal diseases
   c. Bone fracture
   d. Vision loss

5. Which of the following chemicals is related to Bhopal gas tragedy?
   a. Methyl isocyanate
   b. Ethyl isocyaante
   c. Chlorine
   d. None of the above

6. What is an effective strategy to reduce chemical contamination in rural communities?
   a. Increase pesticide use
   b. Promote sustainable agriculture
   c. Store water in open container
   d. Avoid washing hands

7. Which of the following is a commonly found heavy metal in contaminated soil?
   a. Sodium
   b. Uranium
   c. Lead
   d. Nitrate

8. Which of the following is an effective Water Remediation Technique?
   a. Bioremediation
   b. Reverse osmosis
   c. Accelerate the process
   d. None of the above

9. Bhopal gas tragedy in India was occurred in
   a. 1986
   b. 1985
   c. 1984
   d. 1981

10. Which of the following strategies is NOT typically used to remediate contaminated soil and water?
   a. Phytoremediation
   b. Bioremediation
   c. Incineration
   d. Desalination

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Descriptive

Time : 1 hr. 15 mins. **Marks: 25**

[Answer question no.1 & any two (2) from the rest]

1. a. What are the biggest challenges rural areas face when implementing soil and water remediation techniques? **2+3=5**

   b. What causes contamination in the rural areas of Assam and Meghalaya?

2. a. How can the use of pesticides and fertilizers be managed to minimize environmental contamination? **4+3+3 =10**

   b. What are PFAS and TCE?

   c. How do poor waste management practices contribute to the spread of chemical hazards in rural areas?

3. a. What are the main sources of water contamination in rural areas? **3+3+4 =10**

   b. State three preventive measures for soil and water pollution.

   c. How do heavy metals and pesticides affect soil chemistry and ecosystem functions?

4. a. How are people affected through contamination? **3+4+3 =10**

   b. What is Coral Bleaching? What causes bleaching?

   c. What is Activated Carbon Adsorption? How does it purify water?

5. a. What outreach methods work best to educate rural populations about environmental hazards? **2+3+2+3 = 10**

   b. What is the primary goal of soil remediation?

   c. What is bioremediation?

   d. What is a chemical treatment for soil remediation?

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