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Total No. of Pages : 02

Total No. of Questions : 09

M.Sc. (Chemistry) (2015 to 2017) (Sem.-4)

ENVIRONMENTAL CHEMISTRY

Subject Code : MSCH-402

Paper ID : [A2809]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt FIVE questions IN all including Question No.1 which is compulsory and selecting one each from unit –I to IV

1. Compulsory question :

- a) Write a note on thermal pollution.
- b) What is sewage?
- c) Which radiations are responsible for the production of ions and radicals in upper atmosphere? Illustrate with chemical equations.
- d) Name two pollutants produced by the burning of coal. Support your answer with chemical equations.
- e) What are the biochemical effects of oxides of Sulphur?
- f) Discuss in brief the principles of decomposition.
- g) What is PAN? Give chemical equations for its formation.
- h) What do you understand by term Haze? How is it formed?
- i) What is hydrocarbon emission? Give the reasons for the same,
- j) Write in brief about CFCs and CFHCs.

UNIT-I

2.
 - a) What precautions will you recommend to the management of sugar industry so that effluents released are pollution free? (10)
 - b) Illustrate the principle of biogeochemical cycling with the help of Nitrogen and Phosphorous cycle in environment. (10)

3. a) Describe residual chlorine and role of micro-organisms in treatment of waste water in details. (10)
- b) Discuss in details the various sources and types of water pollution from those sources. (10)

UNIT-II

4. a) What are oil spills? What are its impacts on aquatic life? (10)
- b) Discuss in details the waste water treatment methods. (10)
5. a) What is so unique about ammonium nitrate? It was considered an ideal fertilizer long time back. Will you still prefer to use ammonium nitrate as a fertilizer? If no, Explain. (10)
- b) What is the chemical composition of lakes or a wet land? Describe in details giving its significance. (10)

UNIT-III

6. a) Write a detailed note on air pollution controlling instruments. (10)
- b) What are the processes occurring in soil that operate to reduce the harmful effects of pollutants? (10)
7. a) Describe photochemical reactions in atmosphere with their mechanisms. (10)
- b) Define and describe smog formation and its types in details. (10)

UNIT-IV

8. a) Write a note on waste management. Discuss in details the disposal methods. (10)
- b) Discuss the advantages and disadvantages of physico-chemical treatment of sewage as compared with biological treatment in details. (10)
9. a) Write a detailed note on chemical solutions to environmental problems and biodegradability. (10)
- b) Discuss the biochemical effects of arsenic and organic wastes in the environment. (10)