

Seat  
No.

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मापक- 002

**ELECTIVE - I**

**Environmental Risk Assessment & Hazard Management  
(1052)**

**P. Pages : 2**

**Time : Three Hours**

**Max. Marks : 100**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any five** questions.

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|----|---|----|
| 1. | Explain hazard identification system in details. Discuss the problems associated with exposure risk assessment.                                 | 20 |
| 2. | Discuss in details various methods for treatment of hazardous wastes with their advantages and limitations.                                     | 20 |
| 3. | a) Discuss the role of EIA to minimize environmental risks and hazards due to thermal power plants.   | 10 |
|    | b) Explain in detail role of EMS to mitigate hazards in chemical industries.  | 10 |
| 4. | a) Discuss the use of expert system in simulation modeling.   | 10 |
|    | b) Describe the "Air pollution control model". Discuss the factors which are essential to examine for making the "Air Pollution Control model". | 10 |
| 5. | a) Explain the importance of the vegetative support layer in a landfill cover system.   | 10 |
|    | b) Identify the three major components of a landfill cover system and describe their functions.   | 10 |

6. a) Give an example of a chemical compound that specifically induces damages to : 2x5=10
- i) The kidney.
  - ii) The liver.
  - iii) The bone marrow.
  - iv) Central nervous system.
  - v) The testicles.
- b) Explain the fundamental difference between risk assessment of carcinogenic and mutagenic agents and the compounds that induce effects like malformation or neurotoxicity. 10
7. a) Describe how risk assessment might be used at a hazardous waste site to assist in establishing a specific cleanup level for removal of trichloroethylene in groundwater. 10
- b) What factor might be employed to reduce the number of chemicals for which fate and transport modeling will be required ? 10
8. Write short note on following (All) 5x4=20
- a) Radioactive waste management in Nuclear power plant.
  - b) Cradle-to-grave concept for hazardous waste management.
  - c) Hazard identification system.
  - d) Generic algorithm.

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