



**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. Answer sheet 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. | Enlist the various sources of Hazardous waste. Explain the Principle of chemical treatment of hazardous waste. Describe the different chemical treatment operations for treatment of hazardous waste.                     | <b>20</b> |
| 2. | An engineered landfill used for dumping hazardous waste is found to pollute the nearby wells. Explain in details, use of mathematical modeling and physical field work to study ground water contamination near the area. | <b>20</b> |
| 3. | Discuss in details, role of EIA to minimize environmental risks and hazards due to thermal power plants.  | <b>20</b> |
| 4. | a) Explain the fate of chemical toxicants in the body of human being with the help of block diagram.  | <b>10</b> |
|    | b) Describe – "Environmental Simulation Modeling".  | <b>10</b> |
| 5. | a) How do you assess the performance of the air quality model? Explain any four performance evaluation statistics.  | <b>10</b> |
|    | b) Discuss the waste management in Nuclear Power Plant.   | <b>10</b> |
| 6. | a) Explain Cradle – To – Grave concept for hazardous waste management.  | <b>10</b> |

- b) Explain the importance of the vegetative support layer in a landfill cover system. **10**
7. a) Discuss the basic difference between risk assessment of carcinogenic and mutagenic agents and the compounds that induce effect like Malformation or Neurotoxicity. **10**
- b) Discuss the main routes of exposures by which the organism can be exposed to chemical substances present in the environment. **10**
8. Write short note on following **all**. **20**
- i) Genetic algorithm
- ii) Types of radiation
- iii) Toxicity
- iv) Pyrolysis.

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