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16172

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
 - (2) *Answer each next main question on a new page.*
 - (3) *Illustrate your answers with neat sketches wherever necessary.*
 - (4) *Figures to the right indicate full marks.*
 - (5) *Assume suitable data, if necessary.*
 - (6) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

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|---|--------------|
| 1. A) Attempt any three : | 12 |
| a) Define Air Pollution. Classify the Air Pollutants. | |
| b) Define water pollution. List sources of water pollution (any four). | |
| c) Name any two pollutants produced from urea plant and state their effects. | |
| d) Explain term solid waste and give classification of it. | |
| B) Attempt any one : | 6 |
| a) Describe air pollution controlling method by using wet scrubber. | |
| b) Explain 3 R's principle with example. | |
| 2. Attempt any four : | 16 |
| a) State the principle of Incineration. Draw neat labeled sketch of catalytic incinerator. | |
| b) Explain the following water pollution types : | |
| a) Ground water pollution | |
| b) Sea water pollution. | |
| c) Classify waste water and state its characteristics. | |
| d) Explain in a brief about collection of solid waste. | |
| e) State the necessity of Environmental Audit for any chemical plant. | |
| 3. Attempt any four : | 16 |
| a) State the working principle of fabric filter. Draw neat labeled sketch of fabric filter. | |
| b) State the effect of air pollution on human health. | |
| c) Describe working of trickling filter with diagram. | |

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- d) Explain working of cyclone separator with neat sketch.
- e) State the role of pollution control board.
- f) Explain preliminary and primary treatment of waste water.
- 4. A) Attempt any three :** **12**
- a) Explain activated sludge method for waste water treatment with neat sketch.
- b) Explain sludge thickening.
- c) List the natural and man-made sources of air pollution ? Write name of pollutants in them.
- d) State the business benefits of ISO 14000.
- B) Attempt any one :** **6**
- a) Explain the pollution problems occurred due to black liquor in paper industry.
- b) Write the procedure adopted for environmental audit.
- 5. Attempt any four :** **16**
- a) Explain the working principle of high volume sampler with neat sketch.
- b) Give classification of biomedical wastes and state the methods used for handling biomedical waste.
- c) State any four drinking water quality standards specified by WHO.
- d) Explain the need of ISO 14001 certification in industry.
- e) Describe sludge dewatering and disposal method.
- f) Identify possible effects of water pollution on eco system.
- 6. Attempt any four :** **16**
- a) Describe with neat sketch, a working cyclone scrubber.
- b) Explain working of electrostatic precipitator. State its advantages and disadvantages.
- c) Define the terms BOD and COD. State their significance.
- d) Explain the treatment methods for Ammonia plant effluents.
- e) Explain Grab and composite sampling methods.
- f) State the possible ways to create wealth from waste.
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