



11819

17646

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) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

- | | Marks |
|---|--------------|
| 1. a) Attempt any three : | 12 |
| i) Define air pollution. State any four man-made sources of air pollution. | |
| ii) Define water pollution and explain its causes. | |
| iii) Name the pollutants produced from urea plant and their effects. | |
| iv) State any four sources of solid wastes. | |
| b) Attempt any one : | 6 |
| i) Explain working of absorption sampler with neat sketch. | |
| ii) Describe mechanical volume reduction method of processing technique with neat sketch. | |
| 2. Attempt any four : | 16 |
| i) Write working principle of cyclone separator with neat sketch. | |
| ii) Define BOD and COD. State their significance. | |
| iii) Explain working of trickling filters. | |
| iv) Explain 3R principle for solid waste management. | |
| v) Give reasons for choosing and implementing ISO 14001 in industries. | |
| 3. Attempt any four : | 16 |
| i) State the effects of air pollution on human health. | |
| ii) Explain use of high volume sampler for particulate pollution sampling. | |
| iii) List out physical and chemical characteristics of waste water, four each. | |
| iv) Explain working of fabric filter with neat labeled sketch. | |
| v) Identify possible effects of water pollution on ecosystem. | |
| vi) Describe sludge dewatering and disposal method. | |

P.T.O.

4. a) Attempt **any three** :

- i) Explain working of activated sludge treatment method.
- ii) Explain the term :
 - i) Do
 - ii) pH
 - iii) TDS
 - iv) TSS
- iii) Explain working of catalytic incinerator.
- iv) Explain the need of environmental audit.

b) Attempt **any one** :

- i) Explain the recovery of chemicals from black liquor.
- ii) Explain accreditation and certification process in ISO 14000.

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5. Attempt **any four** :

- i) List the different control measures of air pollution (Gaseous and particulate)
- ii) Give classification of medical wastes.
- iii) State the role of pollution control board.
- iv) State the purpose and advantages of environmental audit.
- v) Explain waste water sampling methods.
- vi) Explain preliminary and primary treatment of waste water.

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6. Attempt **any four** :

- i) Describe air pollution control method by using electrostatic precipitator.
- ii) Explain bad effects of carbon monoxide and sulfur oxides on human health and on plants.
- iii) Explain activated sludge treatment method for waste water treatment.
- iv) Explain waste water treatment in urea plant.
- v) In what way do man-made organic poisons affect river and lake water ?
- vi) Explain factors affecting generation rate of solid waste.

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