

17646

21415

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.

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|---|--------------|
| 1. [A] Attempt any THREE : | 12 |
| (a) Define Air pollutant and Air pollution. | |
| (b) List any four sources of water pollution and four effects of water pollution. | |
| (c) Name methods used for pollution control in Fertilizer Industry. | |
| (d) Write classification of solid waste. (4 points) | |
| [B] Attempt any ONE : | 6 |
| (a) Write procedure of working of Dust fall jar with neat sketch. | |
| (b) Explain methods of sludge treatment. | |
| 2. Attempt any FOUR : | 16 |
| (a) State principle of Gas Adsorption. Draw neat labelled sketch of venturi scrubber. | |
| (b) Explain working of Activated sludge treatment plant. | |
| (c) State the role of Pollution Control Board in preventing pollution. | |
| (d) Explain 3R principle for solid waste management. | |
| (e) Write four steps involved in Environment Audit. | |

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- 3. Attempt any FOUR :** **16**
- (a) Explain Absorption Sampling method for gaseous pollutants.
 - (b) Give the classification of Air pollutant.
 - (c) Write CPCB Air quality standards.
 - (d) Define BOD and COD. State their significance.
 - (e) List out Chemical and Biological characteristics of waste water. (four points)
 - (f) Explain shortly Grab sampling and Composite sampling.
- 4. [A] Attempt any THREE :** **12**
- (a) Write working principle of Gravity settling chamber.
 - (b) Describe the preliminary treatment method for effluent.
 - (c) State any four drinking water quality standards specified by WHO.
 - (d) Explain shortly Business benefits of ISO-14000.
- [B] Attempt any ONE :** **6**
- (a) State the necessity of recovery of chemical from Black liquor.
 - (b) Outline the objectives and components of Environment management.
- 5. Attempt any FOUR :** **16**
- (a) Draw a labelled sketch of Fabric Filter.
 - (b) Give the types of water pollutants.
 - (c) Write steps in primary treatment (minimum two steps) of effluents.
 - (d) Describe sludge thickening and sludge digestion.
 - (e) Write characteristics of solid waste.
 - (f) State the need of ISO 14001.
- 6. Attempt any FOUR :** **16**
- (a) Describe construction and working of cyclone separator.
 - (b) Draw a sketch of Fixed Bed Adsorber. Write its working.
 - (c) Explain sedimentation method for waste water treatment.
 - (d) State the meaning of the term PH and DO. State its significance.
 - (e) List the pollutants produced from Urea plant.
 - (f) List the solid waste disposal process.
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