

17646

16117

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

Marks

1. a) **Attempt any THREE of the following:** **12**
- (i) List any eight air pollutants.
 - (ii) List any eight sources of water pollution.
 - (iii) Name the methods used for pollution control in fertiliser industry.
 - (iv) State any four characteristics of solid waste.
- b) **Attempt any ONE of the following:** **6**
- (i) Explain construction and working of cyclone separator.
 - (ii) List the method of solid waste collection. Explain any one of them.

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- 2. Attempt any FOUR of the following:** **16**
- a) Draw neat labeled diagram of electrostatic precipitator (wire and pipe type).
 - b) Explain preliminary treatment for waste water.
 - c) Explain working of trickling filter.
 - d) Give classification of biomedical waste.
 - e) State the objective of environment management program in industry.
- 3. Attempt any FOUR of the following:** **16**
- a) Explain working of high volume sampler for measurement of particulate matter.
 - b) Draw neat sketch of bag filter. State its two applications.
 - c) List physical and chemical characteristics of waste water, any four.
 - d) Explain working of venturi scrubber.
 - e) State the role of pollution control board.
 - f) Explain sludge thickening and dewatering.
- 4. a) Attempt any THREE of the following:** **12**
- (i) Explain use of froth flotation for waste water treatment.
 - (ii) Define BOD and COD. State their significance.
 - (iii) Draw labeled sketch of catalytic converter.
 - (iv) Draw business will be benefited after implementation of ISO 14001?
- b) Attempt any ONE of the following:** **6**
- (i) Explain recovery of chemicals from black liquor.
 - (ii) Explain procedure for environment audit and activities related to it.

- 5. Attempt any FOUR of the following:** **16**
- a) Why safety precautions are required while handling electrostatic precipitated? State its advantages and disadvantages.
 - b) Explain 3 R principle.
 - c) Explain activated sludge treatment method.
 - d) State necessity of ISO 14001 certification.
 - e) Write WHO standards for drinking water.
 - f) Explain grab sampling for waste water with neat sketch.
- 6. Attempt any FOUR of the following:** **16**
- a) State the effects of pollutants on human health.
 - b) State CPCB norms for any industry regarding air quality.
 - c) Draw labeled diagram for trickling filter.
 - d) Explain any one method used for pollution control in fertiliser industry.
 - e) State advantages and disadvantages of wet scrubber.
 - f) Explain method of disposal of biomedical waste.
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