

12173

11122

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following:

20

- a) Define -
- (i) Environment
 - (ii) Eco-system
 - (iii) Pollution
 - (iv) Pollutants
- b) List any four sources of air pollution from both natural and man-made.
- c) Enlist any four pollutants and their effects on human health.
- d) List any four economic losses due to air pollution.
- e) List any four terms used in chemical analysis of water.
- f) Define noise and write different sources of it.
- g) What is meant by green house effect?

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) List any four standards mentioned in ISO 14000
 - b) Write any four general powers of a central government in relation to environmental protection act 1986.
 - c) Write components of environment and eco-system.
 - d) Write the importance of bio-diversity.
 - e) Write the threats to bio-diversity.
 - f) List any three photo chemical reactions and write about nitrogen-dioxide photo chemical reaction.
- 3. Attempt any FOUR of the following:** **16**
- a) Describe working of catalytic convertor with neat sketch.
 - b) What is meant by EGR system and why it is necessary in diesel engines?
 - c) Which pollutants are produced under following conditions and how?
 - (i) Idling of engine
 - (ii) Running of vehicle at normal speed.
 - d) Explain working of positive crankcase ventilation system with block diagram.
 - e) What are the main causes of air pollutants from S.I. engines?
 - f) Write the pollution norms of Bharat stage III and IV of a petrol car.

- 4. Attempt any FOUR of the following:** **16**
- a) Which factors are considered in design of engine to control pollution?
 - b) How turbocharger is suitable to reduce air pollution?
 - c) How CRDI concept of fuel injection helps to reduce pollution from diesel engine?
 - d) Why canister purge unit is used in engine? Locate the place of it in fuel supply system of engine.
 - e) Enlist any eight industries which produces air pollution.
 - f) List and write in brief biological parameters in analysis of water.
- 5. Attempt any TWO of the following:** **16**
- a) List any eight effects of water pollution.
 - b) List and write in brief the steps involved in treatment of water.
 - c) What are the sources of noise and enlist effects of noise on human health?
- 6. Attempt any TWO of the following:** **16**
- a) Write the five steps involved in solid waste management practices.
 - b) Write the sources, types and effects of radiation.
 - c) What is meant by acid rain and ozone depletion?
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