

N.B.: (1) All questions are compulsory.

(2) Use of log table or nonprogrammable calculator is permitted.

- Q.1 A Attempt any Two of the following 8
- i What is air pollution? Classify the air pollutants on the basis of their sources.
  - ii How the air samples are collected? Explain in details.
  - iii Justify "The vehicles moving near Taj Mahal are recommended to use low sulphur fuel".
  - iv How is ammonia estimated in air sample?
- B Describe the concept of carbon credit in detail. 4
- OR
- B With the help of neat diagram, elaborate the stag process to remove pollutants from industrial exhaust. 4
- Q.2 A Attempt any Two of the following 8
- i What are the requirements that a water sample must fulfill for its use as potable water?
  - ii Give the account of direct and indirect pollutants of water reservoirs.
  - iii Discuss the need of analysis of bore well water prior to putting it to use.
  - iv What do you understand by the term bottled mineral water? Comment on its quality?
- B One of the two water samples analyzed contained calcium ions and the other magnesium ions.  $25\text{cm}^3$  of the first sample required  $4.5\text{cm}^3$  and the second required  $3.2\text{cm}^3$  of  $0.01\text{M}$  EDTA. Calculate the hardness of the two water samples. [At wt Ca = 40 and Mg = 24] 4
- OR
- B Explain the documentation and certification required before launching bottled potable water in the market. 4

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- Q.3 A Attempt any Two of the following 8
- i What is fertility of soil? How it gets affected by soil pollution?
  - ii What are the serious effects of noise pollution?
  - iii With the help of neat diagram, explain working of cooling towers.
  - iv What is meant by allergy? Give account of medicines used for allergy treatment.
- B What are the sources of radioactive pollutants? What care is to be taken while disposal of the radioactive waste? 4
- OR
- B What is environmental audit? Explain the methodology of environmental audit. 4
- Q.4 A Attempt any Two of the following 8
- i Explain various methods of biodegradation of insecticides.
  - ii Describe the chromatographic method for chloride determination in the insecticide sample.
  - iii What are the ingredients of the detergent? Give their role in the detergent activity.
  - iv With the help of suitable diagram, explain fractional distillation of petroleum.
- B Explain the process for determination of oxygen release capacity of a detergent. 4
- OR
- B What is meant by fuel? What do you understand by the term calorific value of fuel? Why gaseous fuels are best fuels? 4
- Q.5 Attempt any Four of the following 12
- i What are the green house gases? How are they substituted?
  - ii What are the parameters of automobile exhaust tested under PUC?
  - iii Why the water from natural sources is not recommended for direct drinking?
  - iv What are the various treatments given to the water from natural reservoirs for converting it to bottled mineral water?
  - v What is meant by thermal pollution? How it affects the aquatic life?
  - vi Explain the responsibility of each individual towards the environment as per article 51A?
  - vii What are the factors to be considered while selecting the detergent?
  - viii Comment on the pollution caused by the insecticides and pesticides due to the methods of their application.