

**QP Code : 19602**

(2½ Hours)

[ Total Marks : 60

- N.B. :** 1. All questions are compulsory  
2. Use of log table or nonprogrammable calculator is permitted  
3. Figures to the right indicate full marks.

1. (A) Attempt any Two of the following :

- (i) Explain any two sampling equipments used for sampling of air.
- (ii) Write note on - oxides of carbon as air pollutant.
- (iii) How do particulate matter acts as pollutant? Why are they hazardous?
- (iv) What way the chemical industries contribute to air pollution? Suggest some control measures.

(B) Elaborate concept of carbon credit related to global warming.

**OR**

(B) What are the sources of air pollution? How are the pollutants classified based on their source?

2. (A) Attempt any Two of the following

- (i) Describe indirect pollutants of potable water reservoirs.
- (ii) Name the parameters to be analyzed of a bore well water. Discuss any one of them in detail.
- (iii) Explain the need of documentation required to launch a brand of bottled mineral water.
- (iv) What is hardness of water? How does it restrict, its use in the industry?

(B) The total hardness of a water sample is in proportion of 1:2 for  $\text{CaCO}_3$  and  $\text{MgCO}_3$ , respectively. If the total hardness of the sample is 252 PPM. Calculate the volume of 0.01 M EDTA solution required for 25 cm<sup>3</sup> of sample for its  $\text{CaCO}_3$  and  $\text{MgCO}_3$  separately.

[At. Wt. Ca = 40, Mg = 24, C = 12, O = 16]

**OR**

(B) How is the hard water softened?

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**TURN OVER**

3. (A) Attempt any Two of the following
- (i) What is water binding capacity of soil? Explain it with respect to the fertility of soil.
  - (ii) What is thermal pollution? List the sources of thermal pollution. Explain any of it in detail.
  - (iii) Give the effects of noise pollution on living beings. How is noise pollution controlled?
  - (iv) What is the role of Pollution Control board in monitoring and controlling pollution?

(B) "Disposal of radioactive waste needs proper attention" justify the statement

OR

(B) What do you mean by the term allergy? Give the role of pollution in allergy.

4. (A) Attempt any Two of the following

- (i) What are insecticides? How are they classified?
- (ii) "Detergents are preferred to soaps in washing process" justify the statement.
- (iii) Explain the method of quantitative determination of active anionic matter in the detergent.
- (iv) Explain the fractional distillation process of crude oil with the help of suitable diagram.

(B) What is calorific value of fuel? How is it determined?

OR

(B) How is chromatographic technique applied for the determination of chloride in pesticides?

5. Attempt any Four of the following

- (i) Give the composition of pure air and highlight causes of global warming.
- (ii) How do the vehicles contribute to air pollution? How can the pollution due to vehicle kept under control?
- (iii) What are various sources of potable water? Discuss the properties of potable water?
- (iv) Why is the distilled water not used for drinking purpose?
- (v) What are the sources of soil pollution?
- (vi) What is environmental audit? How is it done?
- (vii) Discuss the criteria for selecting the detergent.
- (viii) What is LPG? Why is LPG preferred over the other fuels?

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