

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

(2) Use of log table/non programmable calculator is allowed.

1. (A) Answer any two of the following:-

- (i) What are the sources of air pollution? How are the pollutants classified?
 - (ii) Discuss the significance of PUC test of automobile exhaust.
 - (iii) Describe the concept of carbon credit in detail.
 - (iv) What are aerosols? How are they sampled?
- (b) "CO is more harmful than CO₂ for the human beings" justify the statement. 4

OR

(b) How is the particulate matter in air determined? 4

2. Answer any two of the following:- 8

- (i) Elaborate various reasons of pollution of natural water reservoirs.
 - (ii) How is the water from natural reservoirs purified to get the safe potable water?
 - (iii) What do you understand by the term bottled mineral water? Comment on its quality.
 - (iv) Explain the documentation and certification required before launching bottled potable water in the market.
- (b) 25.0 cm³ of a given water sample contains 1.8 mg of calcium and 1.5 mg of magnesium. Calculate the total hardness in PPM with respect to Calcium Carbonate and Magnesium Carbonate of the water samples. 4
[At. wt. Ca = 40, Mg = 24, C = 12, O = 16].

OR

(b) Justify- "The bore well water needs detailed chemical analysis before putting it in use." 4

3. (A) Answer any two of the following:- 8

- (i) What is soil analysis? Give its importance.
- (ii) Explain the adverse effects of noise pollution on total environment.
- (iii) With the help of neat diagram explain working of cooling tower.
- (iv) What are the sources of radioactive pollution?

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(b) Explain the term environmental audit? What are its benefits? 4

OR

(b) What is allergy? Explain its preventive measures. 4

4. (A) Answer any two of the following:- 8

(i) Discuss the classification of insecticides based on its mode of action on insects.

(ii) What are the constituents present in the detergent? Explain the role of softeners in detail.

(iii) What is crude oil? Explain cracking of petroleum with suitable reactions.

(iv) What is calorific value of fuel? Why gaseous fuels are more efficient than liquid and solid fuels?

(b) Describe the gas chromatographic method for determination of chloride present in insecticide sample. 4

OR

(b) Explain the method of determination of total alkalinity of the detergent. 4

5. Answer any four of the following:- 12

(i) Justify "The vehicles moving near Taj Mahal are recommended to use low sulphur fuel".

(ii) Give the detail composition of pure air, with percentage of any four components.

(iii) Why is de-ionized distilled water not recommended for drinking purpose?

(iv) Discuss the properties of potable water.

(v) Explain the responsibility of state government towards the environment as per article 48A.

(vi) What is Thermal Pollution? Give its sources.

(vii) Justify "Insecticides are more dangerous than the insects".

(viii) Explain "Flash point" and "fire point" with respect to petrochemical products.