

M.Sc Sem III
Analytical Chemistry Q.P. Code :05442

P-III

[Time: 2 ½ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B: 1. All questions are compulsory.
2. Use of log table/non-programmable calculator is allowed.

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

08

- Give the composition of pure air and list the natural sources of air pollution.
- How does particulate matter contribute as air pollutant? How such pollution can be controlled?
- Explain the role of stag in controlling air pollution.
- Discuss the causes of global warming.

B) What is PUC of an automobile? Give its significance.

04

OR

B) How is ammonia estimated in air sample?

04

Q.2 A) Answer any two of the following:-

08

- What are the properties of potable water?
- How does hard water converted to soft water? State it's need.
- Why bore well water should be analyzed before putting to use?
- Explain the documentation required before launching bottled potable water in the market.

B) 25cm³ of sample A and 25cm³ of sample B required 1.6 cm³ and 2.2 cm³ respectively of 0.01M EDTA for its calcium content. Calculate the CaCO₃ hardness of a water sample, prepared by mixing sample A and sample B in equal proportion. [At. wt. Ca = 40, C = 12 and O = 16].

04

OR

B) Discuss the purification steps taken by municipal corporations before supply of water to the residential area.

04

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

08

- What is fertility of soil? How does it get affected due to Organic fertilizers?
- What is meant by thermal pollution? Explain its effect on aquatic life.
- Discuss the short term and long term effects of radioactive pollutants.
- Explain the term "allergy". Give an account of medicines used for allergy treatment.

B) What is environmental audit? How is it done?

04

OR

B) What is the responsibility of an individual citizen in controlling pollution with reference to article 51A?

04

TURN OVER

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

- i) How are the insecticides and pesticides classified? Why are they more dangerous pollutants?
- ii) Explain the fractional distillation process of crude oil, with the help of suitable diagram
- iii) Describe the method of quantitative determination of oxygen release capacity of the detergent.
- iv) What is petroleum? Explain the terms "cracking" and "refining" with respect to petroleum products.

B) Explain the chromatographic technique for determination of sulphur in insecticide.

04

OR

B) What are the common ingredients of the detergent? Give their role in the detergent activity.

04

Q.5 Answer any four of the following: -

12

- i) How do oxides of carbon contribute in polluting air?
- ii) Explain working of any one air sampling equipment.
- iii) Compare distilled water and mineral water.
- iv) What are various sources of potable water?
- v) Explain the sources of soil pollution.
- vi) Discuss the effects of noise pollution on living organisms.
- vii) Define and explain the terms- "Flash point" and "Fire point".
- viii) What are the factors to be considered while selecting the detergent?