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ICS 404

First Semester M.Sc. Degree Examination, April 2021
INDUSTRIAL CHEMISTRY
Environment Health and Safety Measures

Time : 3 Hours

Max. Marks : 70

- Instructions :**
- 1) Answer **any five** questions from Part – A and **any five** questions from Part – B.
 - 2) Figures to the **right** indicate marks.

PART – A

1. Answer **any five** sub-questions : (5×2=10)
- a) What is PAN ? Mention its role as an environmental pollutant.
 - b) What are greenhouse gases ?
 - c) How turbidity affects drinking water quality ?
 - d) List out the different forms of nitrogen in natural water.
 - e) Mention the laws related to quality control.
 - f) What is sampling ? Give its significance.
 - g) Write the emergency procedure to be followed in case of fire accident in the laboratory.
 - h) Write any two safety rules involved in the transportation and storage of chemicals.

PART – B

Answer **any five full** questions : (5×12=60)

2. a) Explain atmospheric segments in detail.
b) Discuss the formation of acid rain.
c) Write a note on air pollutants. (4+4+4)

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3. a) Explain the working of fabric filters with the help of a diagram.
b) What are the major sources of SO_x , CO and NO_x ?
c) Discuss the working of electrostatic precipitator and centrifugal separators. (4+4+4)
4. a) What is hydrologic cycle ? Explain.
b) What is meant by hard water ? Explain the methods used for the determination of hardness of water. (6+6)
5. a) Explain the method adopted for the determination of residual chlorine in water.
b) How to estimate the fluoride content in water ?
c) What are the major sources of water ? (4+4+4)
6. a) Explain how ocean dumping of chemical weapons effect the aquatic life.
b) Describe the quality control in raw materials, production and finished product in industry. (6+6)
7. a) What is ASTM ? How is it different from AGMARK ?
b) Describe the salient features and benefits of ISO 17025 and ISO 9000.
c) Describe the importance and responsibilities of quality assurance in a chemical industry. (4+4+4)
8. a) Why is it important to safeguard and secure the data properly ? Explain.
b) What are the safety measures to be taken during the disposal of laboratory waste into a sanitary sewer system ?
c) Account on emergency response plan. (4+4+4)
9. a) Write briefly on intellectual property rights.
b) Discuss the health safety and environmental measures to be taken in a chemical industry.
c) Describe the importance and procedure for verification and segregation of laboratory waste. (4+4+4)
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