

This question paper contains 2 printed pages]

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S. No. of Question Paper : 8307

Unique Paper Code : 217163

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Name of the Paper : ICPT-101-Industrial Chemistry-I

Name of the Course : B.Sc. (Prog.) Applied Physical Science (Industrial Chemistry) Part I

Semester : I

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt six questions in all including Q. No. 1 which is compulsory.

1. (a) Give the hazards in handling of phosgene gas. 5×3
(b) Explain the solvent extraction process.
(c) Give the uses of potash alum.
(d) How ozone hole is created ? Describe the cause of ozone hole.
(e) Give a brief account of methods to remove permanent hardness of water.

2. (a) Briefly describe solid-liquid leaching process. 4×3
(b) Write a short note on zone refining of metals.
(c) Differentiate between calcination and roasting.
(d) Explain ion exchange method for separation of rare earths

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3. (a) Give the industrial preparation of fluorine. Mention the important applications of fluorine gas. 6
- (b) What are the hazards in handling of chlorine ? 3
- (c) Give a method for the preparation of sulphur dioxide gas on large scale. 3
4. (a) State *three* important uses of hydrogen peroxide. 3
- (b) How is nitric acid manufactured by Ostwald's process ? 3
- (c) Give the method for the production of chrome alum. Mention its important applications. 6
5. (a) What are particulates ? Give methods to control the emission of particulates. 6
- (b) Mention air pollution causes, sources and control process in terms of oxides of nitrogen or sulphur. 6
6. (a) What are the common sources of water pollution ? 3
- (b) Explain how fertilizers and pesticides can be treated to check effluents. 6
- (c) Describe the activated sludge process. What are its advantages ? 3
7. (a) What is aerobic and anaerobic biological oxidation ? How this technique have been used for sewage treatment ? 6
- (b) Write a short note on photochemical smog. 3
- (c) Give a method for the preparation of carbon dioxide gas on large scale. 3
8. (a) Mention the important uses of argon and neon gases. 6
- (b) Explain the term "Available Chlorine" in bleaching powder. 3
- (c) What is the difference between industrial and domestic water ? 3