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SARDAR PATEL UNIVERSITY

Bachelor of Science (Semester 5) Examination 2025

US05CICH23: Chemical Process Industries



Date: 07-10-2025 (Tuesday) : 10 AM To 1-00 PM

Total: 70 Marks

Note: Figures to the right indicate full marks.

[10]

Q.1 Answer the following MCQs. (All are compulsory)

1. Nitrogen Content in an ammonium nitrate is around.....
 - (a) 35 %
 - (b) 20 %
 - (c) 50 %
 - (d) 65%.
2. Which of the following inorganic chemical is responsible for depletion of ozone layer.....?
 - (a) Iodine
 - (b) Fluorine
 - (c) Fluorocarbons
 - (d) Bromine
3. In Electro thermal industries the use of electricity as a source of
 - (a) Light
 - (b) Heat
 - (c) Radiation
 - (d) Conduction
4. Sodium bicarbonate is manufactured by...
 - (a) Leblanc Process
 - (b) Solvay Process
 - (c) Electrolytic Process
 - (d) Haber Process
5. The chemical formula of Caustic Potash is.....
 - (a) Na_2CO_3
 - (b) NaHCO_3
 - (c) NaCl
 - (d) KOH
6. Resistance electric furnaces are used for the raw material having.....
 - (a) Low Thermal Resistance
 - (b) Sublimed matters
 - (c) Very High Thermal Resistance
 - (d) High Electrical Resistance
7. Which of the following is an example of Electric Furnace?
 - (a) Induction furnace
 - (b) Resistance Furnace
 - (c) Arc Furnace
 - (d) All (a, b & c).
8. Which of the following is an example of inorganic Pesticide....
 - (a) D.D.T.
 - (b) B.H.C
 - (c) Gammaxane
 - (d) Lead arsenate
9. Phosphorus oxidized to P_2O_5 by-----
 - (a) Electric furnace
 - (b) Wet process
 - (c) Combustion process
 - (d) None
10. Example of inorganic Rodenticide is.....
 - (a) Zinc phosphide
 - (b) Warfarin
 - (c) Bromadiolone
 - (d) All (a, b & c).

Q.2 Answer the following short question (Attempt 10 out of 12).

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1. Name various methods used for the production of ammonium sulfate.
2. Write the application of Iodine.
3. Write the chemical properties of Hydrazine.
4. Write the industrial applications of SO_2 & CO_2 .

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5. Enlist various methods used for the production of H_2 Gas.
6. Write the applications of Na_2CO_3 .
7. Explain Electrochemical Industries with Example.
8. Write the applications of Potassium Permanganate.
9. Explain Electro thermal Industries with Example
10. Write the classification of Agrochemicals.
11. Write function and examples of Fumigants.
12. Write one example for Attractants and one example for Repellents.

[10]

Q.3 Answer the following long question.

- [A]. Explain the Manufacturing of Ammonia by Haber and Bosch Process.
[B]. Describe the Manufacturing of Urea.

Or

- [A]. Explain Manufacturing of Ammonium Sulphate.
[B]. Describe the Manufacturing of Hydrazine.

[10]

Q.4 Answer the following long question.

- [A]. Discuss the production of Caustic soda by membrane-cell method.
[B]. Explain, Linde Process for manufacturing of N_2 and O_2 Gases.

Or

- [A]. Explain Solvay's ammonia soda process for manufacturing of Soda Ash.
[B]. Describe Lime Soda Process for the production of Caustic Soda.

[10]

Q.5 Answer the following long question.

- [A]. Explain industrial production of Synthetic graphite with neat Sketch.
[B]. Write uses and economics of furnaces and their classification in Details.

Or

- [A]. Explain the production of calcium carbide.
[B]. Describe the industrial production of $MgCl_2$.

Q.6 Answer the following long question.

- [A]. Explain the manufacturing of D.D.T.
[B]. Explain the manufacturing of Phosphoric acid.

Or

- [A]. Describe manufacturing of B.H.C.
[B]. Describe the production of normal superphosphate by a continuous-den process.

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