

22314

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.

Marks**1. Attempt any FIVE of the following :****10**

- (a) List two industrial applications of producer gas.
- (b) Define Refractory.
- (c) Enlist two industrial applications of soda ash.
- (d) List two uses of phosphorus.
- (e) Write the chemical reactions involved in manufacturing of urea.
- (f) Enlist raw materials used for manufacturing of sulfuric acid.
- (g) Enlist the raw materials required in manufacturing of Ammonium Nitrate.

2. Attempt any THREE of the following :**12**

- (a) Draw process flow diagram for manufacturing of phosphoric acid by wet process.
- (b) Explain the manufacturing process of Ammonium Nitrate.
- (c) Draw process flow diagram for manufacturing of single superphosphate.
- (d) Explain the importance of mixed fertilizer in agricultural sector.



- 3. Attempt any THREE of the following : 12**
- (a) Explain the hardening and setting of cement.
 - (b) Explain manufacturing of Acetylene using Calcium carbide as a raw material.
 - (c) Write properties and uses of chlorine and caustic soda.
 - (d) Explain ammonia recovery in Solvay's process for the production of soda ash.
- 4. Attempt any THREE of the following : 12**
- (a) Compare single and triple superphosphate w.r.t. raw material, chemical reaction and chemical formula.
 - (b) Define mixed fertilizer. Explain the term IS – 15 – 15.
 - (c) Draw process flow diagram for manufacturing of cement.
 - (d) Explain manufacturing of carbon dioxide from flue gases.
 - (e) Draw labelled diagram of mercury cell.
- 5. Attempt any TWO of the following : 12**
- (a) Explain manufacturing of Nitric acid with process flow diagram.
 - (b) Explain the manufacturing of urea with process flow diagram.
 - (c) Describe manufacturing of phosphorus with process flow diagram.
- 6. Attempt any TWO of the following : 12**
- (a) Explain manufacturing of Triple superphosphate with process flow diagram.
 - (b) Explain manufacturing of oxygen and nitrogen by Claude's process.
 - (c) Apply the principle of DCDA in manufacturing of sulfuric acid with flow diagram.
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