

22314

**22232**

**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.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

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

**10**

- (a) List the applications of acetylene.
- (b) State the classification of refractories.
- (c) Write properties and uses of caustic soda.
- (d) State the process of conversion yellow phosphorus to red phosphorus.
- (e) State the reason of coating ammonium nitrate with clay.
- (f) State the process for avoiding formation of biurate.
- (g) Write the reaction involved in manufacturing of phosphoric acid by wet process.

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

**12**

- (a) Draw the process flow diagram for manufacturing of hydrochloric acid by synthesis method.
- (b) Explain the manufacturing of ammonium nitrate.
- (c) Draw the process flow diagram for manufacturing of triple super phosphate.
- (d) Write reactions involved in manufacturing of soda ash.



- 3. Attempt any THREE of the following : 12**
- (a) Classify cement on the basis of constituents.
  - (b) Explain manufacturing of water gas.
  - (c) Draw process flow diagram for manufacturing of nitric acid.
  - (d) Draw process flow diagram for manufacturing of ammonia.
- 4. Attempt any THREE of the following : 12**
- (a) Explain manufacturing of Phosphorus.
  - (b) Explain the importance of mixed fertilizer in agriculture sector.
  - (c) Summarize the properties of good refractories. (Any Four)
  - (d) Explain manufacturing of oxygen and nitrogen by Linde's process.
  - (e) State the difference between mixed fertilizer and compound fertilizer with one example.
- 5. Attempt any TWO of the following : 12**
- (a) Explain manufacturing of sulphuric acid by contact process.
  - (b) Explain manufacturing of ammonium sulphate with process flow diagram.
  - (c) Describe manufacturing of caustic soda.
- 6. Attempt any TWO of the following : 12**
- (a) Explain manufacturing of Di-ammonium phosphate.
  - (b) Explain manufacturing of hydrogen.
  - (c) (i) Draw flow diagram for manufacturing of phosphoric acid  
(ii) Write the different grades of mixed fertilizer.
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