

22314

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (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) Name the methods for the manufacturing of oxygen & nitrogen.
- (b) Give the classification of cement based on constituents.
- (c) List any four industrial applications of HCl.
- (d) State any four properties of yellow phosphorus.
- (e) State any two uses each of urea & ammonium nitrate.
- (f) Enlist raw materials for the manufacturing of H_2SO_4 .
- (g) Write molecular formula of biuret. Write its % limit in urea.

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

- (a) Draw the process flow diagram for the manufacturing of H_2SO_4 .
- (b) Explain the manufacturing process of urea.
- (c) Compare red and yellow phosphorus (Any four points).
- (d) Explain importance of mixed fertilizers.



- 3. Attempt any THREE of the following : 12**
- (a) State the properties of Plaster of Paris & write its raw material.
 - (b) Explain the manufacturing of O_2 & N_2 using Linde's process.
 - (c) Draw the process flow diagram for the manufacturing of HCl by salt & acid process.
 - (d) Explain working of ammonia converter with neat diagram.
- 4. Attempt any THREE of the following : 12**
- (a) Explain the manufacturing of single superphosphate using neat flow diagram.
 - (b) Draw the flowsheet for the manufacturing of $NaOH$ & Cl_2 .
 - (c) Summarize the different applications of refractories.
 - (d) Explain the manufacturing of producer gas with raw material & flow diagram.
 - (e) Draw neat flow diagram for manufacturing of soda ash.
- 5. Attempt any TWO of the following : 12**
- (a) Describe the manufacturing of phosphoric acid by H_2SO_4 leaching method with reaction & flow diagram.
 - (b) Describe the manufacturing of NH_3 with raw material & diagram.
 - (c) Describe the manufacturing of yellow phosphorus with neat sketch.
- 6. Attempt any TWO of the following : 12**
- (a) Describe the manufacturing of Nitric acid with neat flow diagram.
 - (b) Apply the concept of absorption and explain the manufacturing of carbon dioxide.
 - (c) Draw neat diagram of Diaphragm cell & write cell notation.
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