

17314

16172

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Figures to the right indicate full marks.
 - (4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any SIX of the following : 12

- (a) How air is dried in sulphuric acid plant ?
- (b) State any two industrial uses of H_2SO_4 .
- (c) SO_3 is not absorbed in water to produce H_2SO_4 . Give reason.
- (d) Write reactions involved in production of H_2SO_4 .
- (e) How steam is produced in Sulphuric acid plant ?
- (f) State Le Chatlier's principle.
- (g) Define Calcination.
- (h) Name different types of Cement.

(B) Attempt any TWO of the following : 8

- (a) Explain manufacturing of water gas.
- (b) Draw neat diagram of Diaphragm cell.
- (c) Explain hardening and setting of cement.

- 2. Attempt any TWO of the following :** **16**
- (a) Explain manufacturing of ammonia with process flow diagram.
 - (b) Describe manufacturing of phosphoric acid by H_2SO_4 leaching process with a flow diagram.
 - (c) Explain manufacturing of hydrochloric acid by synthesis process with a flow diagram.
- 3. Attempt any FOUR of the following :** **16**
- (a) Why yellow phosphorus is stored under water ? How it can be converted into red Phosphorus ?
 - (b) Explain electrothermal process for manufacturing of Phosphorus.
 - (c) Differentiate between wet process and electric furnace process for manufacturing of Phosphoric acid. (Any four points)
 - (d) Write cell notations for Diaphragm & Mercury cell.
 - (e) Explain the function of Ammonization and carbonation tower in manufacturing of Soda ash.
 - (f) Explain working of mercury cell with a neat diagram.
- 4. Attempt any FOUR of the following :** **16**
- (a) Explain manufacturing of Chlorine and Caustic Soda.
 - (b) Explain manufacturing of PCl_3 & PCl_5 .
 - (c) State the difference between single and triple superphosphate. Write reactions involved in their manufacturing processes.
 - (d) Write two industrial uses of HCl and Cl_2 .
 - (e) Draw process flow diagram for manufacturing of acetylene.
 - (f) Describe manufacturing of producer gas.

5. Attempt any TWO of the following :**16**

- (a) Explain manufacturing process of urea with flow diagram.
- (b) Explain manufacturing process of CO_2 by flue gas with neat flow diagram.
- (c) Explain manufacturing process of ammonium nitrate with a neat flow diagram.

6. Attempt any FOUR of the following :**16**

- (a) Explain manufacturing process of acetylene.
 - (b) Explain use of Rotary Kiln in the manufacturing of cement. How pollution in cement plant is controlled ?
 - (c) Draw neat process flow diagram for manufacturing of ammonium phosphate.
 - (d) Explain manufacturing of Nitrogen using Linde's process.
 - (e) Distinguish between Yellow and Red phosphorus.
 - (f) State importance of mixed fertiliser.
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