

22314

21819

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) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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 industrial application of 'water gas' and 'producer gas'.
- (b) Define 'Refractory'. Give it's type.
- (c) Enlist raw material for the manufacturing of Soda Ash.
- (d) Define red and yellow phosphorous.
- (e) State industrial use of Ammonium Sulphate.
- (f) Enlist the reactions involved in manufacturing of Nitric Acid.
- (g) Enlist the raw material required in manufacturing of Ammonium Nitrate.

2. Attempt any THREE of the following :

12

- (a) Draw the process flow diagram for manufacturing of Hydrochloric acid (HCl)
- (b) Explain the manufacturing process of 'urea'.
- (c) Explain the manufacturing process of Di-Ammonium Phosphate.
- (d) Discuss about Economics and manufacturing industries of potassium fertilizer.

- 3. Attempt any THREE of the following : 12**
- (a) Explain the function of constituents of cement.
 - (b) Explain preparation of Hydrogen from water gas.
 - (c) Draw the process flow diagram for manufacturing of sulphuric acid.
 - (d) State the raw materials for manufacturing of ammonia. Write the balanced chemical reaction also.
- 4. Attempt any THREE of the following : 12**
- (a) Explain the manufacturing of Triple super phosphate with flow diagram.
 - (b) Describe manufacturing process of 'Chlorine'.
 - (c) Summarize the properties of good 'refractoriness'.
 - (d) Explain the manufacturing of 'carbon dioxide'.
 - (e) State the industrial applications of mixed fertilizers.
- 5. Attempt any TWO of the following : 12**
- (a) Describe manufacturing of phosphoric acid with raw material. Reactions and flow diagram.
 - (b) Describe the manufacturing of Ammonium Nitrate.
 - (c) Identify and manufacture the phosphorous required for match box sticks.
- 6. Attempt any TWO of the following : 12**
- (a) Enlist industrial application of Soda Ash.
 - (b) Describe the manufacturing of producer gas by using coal.
 - (c) Apply the principle of DCDA in manufacturing of sulfuric acid with flow diagram.
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