

22314

21222

3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

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

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| 1. Attempt any FIVE of the following : | 10 |
| (a) List the names of different Industrial Gases (any 4 names). | |
| (b) State the principle of setting of cement. | |
| (c) Name the industrial applications of soda ash. | |
| (d) Enlist raw materials used for manufacturing of super phosphate. | |
| (e) State the disadvantage of biureate in manufacturing of urea. | |
| (f) Enlist raw materials used for manufacturing of nitric acid. | |
| (g) Write any four uses of Urea. | |
| 2. Attempt any THREE of the following : | 12 |
| (a) Draw well labelled process flow diagram for manufacturing sulphuric acid by contact process. | |
| (b) Explain manufacturing process of Ammonium sulphate. | |
| (c) Write the raw materials and industrial applications of super phosphate and Di-ammonium phosphate on the basis of fertility of soil. | |
| (d) Draw labelled process flow diagram for manufacturing of any one potassium fertilizer. | |

- 3. Attempt any THREE of the following : 12**
- (a) State chemical constituents in percentage of Portland Cement.
 - (b) Explain manufacturing of producer gas with flow diagram by using coal.
 - (c) Draw the labelled process flow diagram for manufacturing of nitric acid.
 - (d) State the industrial applications of Ammonium nitrate.
- 4. Attempt any THREE of the following : 12**
- (a) Draw the process flow diagram for production of triple super phosphate.
 - (b) Draw labelled diagram of Mercury cell with reaction for production of chlorine.
 - (c) Write composition, properties and applications of basic refractory.
 - (d) Explain the manufacturing of Acetylene from calcium carbide with flow diagram.
 - (e) What do you mean by mixed fertilizers ? Write its grades.
- 5. Attempt any TWO of the following : 12**
- (a) Describe manufacturing of phosphoric acid with raw materials, reaction and flow diagram.
 - (b) Describe the manufacturing of ammonium nitrate with raw materials and reaction.
 - (c) Explain the manufacturing process with flow diagram of phosphorous which required for match box.
- 6. Attempt any TWO of the following : 12**
- (a) Describe manufacturing process of caustic soda.
 - (b) Explain manufacture of hydrogen from water gas.
 - (c) Write the manufacturing process with reaction and flow diagram of hydrochloric acid.
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