

17314

21718

3 Hours / 100 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. (A) Answer any SIX :

6 × 2 = 12

- (a) Write down any four industrial applications of sulphuric acid.
- (b) State raw materials used for manufacturing of sulphuric acid.
- (c) Give reason SO_3 dissolved in conc. H_2SO_4 and not in water.
- (d) Enlist four properties of sulphuric acid.
- (e) State merits of contact process.
- (f) Enlist four industrial uses of ammonia.
- (g) List two methods of production of cement.
- (h) Write the cell notation for diaphragm cell.

(B) Answer any TWO :

2 × 4 = 8

- (a) Write the names of raw material required to manufacture HCl by synthesis process and give its manufacturing flow diagram.
- (b) State Linde's and Claude's principle for manufacturing of oxygen and nitrogen.
- (c) Describe manufacturing of Portland cement by dry process with a neat process flow diagram.

2. Answer any TWO :

2 × 8 = 16

- (a) Explain manufacturing process of nitric acid with its flow diagram.
- (b) Describe with flow sheet process for manufacture of triple super-phosphate.
- (c) Draw and describe manufacturing process of chlorine and caustic soda by electrolytic process.

3. Answer any FOUR :

4 × 4 = 16

- (a) Distinguish between yellow and red phosphorus.
- (b) Explain the manufacturing of H_3PO_4 by wet process. Draw diagram with description.
- (c) Draw flow sheet for phosphorus trichloride manufacturing. Write reactions involved.
- (d) Draw a well labelled diagram of mercury cell.
- (e) Write two properties and two uses each of caustic soda and chlorine.
- (f) Give any four industrial uses of soda ash.

4. Answer any FOUR :**4 × 4 = 16**

- (a) Name raw material, reaction used in manufacturing of soda ash.
- (b) Explain how yellow phosphorus is converted to red phosphorus.
- (c) Compare between dry and wet process for cement manufacture. (any 4 points)
- (d) Draw a furnace used in production of phosphorus.
- (e) Describe manufacturing process of water gas.
- (f) Enlist 4 uses of hydrogen.

5. Answer any TWO :**2 × 8 = 16**

- (a) Describe with flow sheet Stengel process for ammonium nitrate.
- (b) Describe manufacturing process for acetylene from calcium carbide. Draw the flow diagram for the process.
- (c) Name two mixed fertilizers. What do you mean by N.P.K. ? Why mixed fertilizers are popular now-a-days ?

6. Answer any FOUR :**4 × 4 = 16**

- (a) Draw block diagram of manufacture of carbon dioxide.
 - (b) What is plaster of paris ? Give its uses.
 - (c) What is biurate ? State any two uses of urea.
 - (d) Draw a neat flow diagram for manufacturing of producer gas.
 - (e) Compare between triple and single superphosphate on the basis of raw materials, uses, reaction and process.
 - (f) Describe manufacturing of ammonium phosphate.
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