



17314

15162

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) Use of Non-programmable Electronic Pocket Calculator is **permissible**.

Marks

1. A) Attempt **any six**: 12
- a) Name any two catalyst's used for manufacturing of sulphuric acid.
 - b) What is fuming sulphuric acid ?
 - c) Write the reactions involved in the manufacture of sulphuric acid.
 - d) Give any two properties and uses of sulphuric acid.
 - e) Name the catalyst used in manufacture of Ammonia.
 - f) Write the cell notation for diaphragm cell.
 - g) Give the constituents of water gas.
 - h) What is gypsum chemically ?
- B) Attempt **any two**: 8
- a) Draw neat labelled figure of Nelson/Diaphragm cell.
 - b) Name any four industrial fuel gases and their uses.
 - c) What is cement ? Give the chemical composition of portland cement.
2. Attempt **any two**: 16
- a) Describe manufacture of urea with neat flow sheet diagram.
 - b) Describe manufacture of phosphoric acid with neat flow sheet diagram.
 - c) Draw only well labelled flow sheet diagram for manufacturing of chlorine and caustic soda.
3. Attempt **any four**: 16
- a) Draw the structures of white and red phosphorus and give the properties of white phosphorus.
 - b) Describe manufacture of phosphorus by Electro thermal process.
 - c) Describe manufacture of PCl_3 .

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- d) Give two properties and two uses of chlorine and caustic soda.
- e) Explain working of Ammonia converter with neat figure.
- f) Draw only flow sheet diagram for manufacture of H_2SO_4 and oleum by contact process.

4. Attempt any four :**16**

- a) Describe manufacture of HCl by synthesis process.
- b) What is plaster of paris ? Give its uses.
- c) Describe manufacture of single super phosphate.
- d) What are fertilizers ? Give the classification of Inorganic fertilizers.
- e) Describe manufacture of producer gas.
- f) Describe manufacture of CO_2 from fermentation process.

5. Attempt any two :**16**

- a) Describe manufacture of sodium carbonate by Solvay's Ammonia Soda process.
- b) With neat flow sheet diagram describe manufacturing process of Nitric acid.
- c) With neat figure explain manufacture of Oxygen and Nitrogen by Claude's process.

6. Attempt any four :**16**

- a) Describe manufacturing of Acetylene by any one method.
 - b) Describe manufacturing of water gas by continuous process.
 - c) Describe manufacture of Ammonium sulphate by Mesberg (Gypsum) process.
 - d) Describe manufacture of Ammonium Nitrate by Stengel process.
 - e) Describe manufacture of phosphorus by commercial/industrial method.
 - f) With block diagram explain manufacture of cement by dry process.
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