



17314

21314

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) Illustrate your answers with **neat** sketches **wherever** necessary.
 - (4) Figures to the **right** indicate **full** marks.
 - (5) Mobile Phone, Pager and **any other** Electronic Communication devices are **not permissible** in Examination Hall.

MARKS

1. A) Attempt **any six** : **12**
- a) Write reactions in manufacture of sulphuric acid.
 - b) Write reactions in manufacture of NaOH from brine.
 - c) List 2 important industrial uses of phosphoric acid.
 - d) List advantages of SPM in Diaphragm cell.
 - e) Enlist 4 types of cement.
 - f) What is 10-20-30 fertiliser ?
 - g) Enlist 4 properties of sulphuric acid.
 - h) Enlist 4 industrial uses of Ammonia.
- B) Attempt **any two** : **8**
- a) Draw flow sheet for Phosphorous Trichloride manufacture. Write the reaction involved.
 - b) Explain with suitable examples, how acetylene is used as a building block.
 - c) Enlist raw materials used for manufacture of cement.
2. Attempt **any two** : **16**
- a) Discuss physico chemical principles involved in manufacture of Ammonia.
 - b) Describe with flow sheet process for manufacture of Triple Super Phosphate.
 - c) Describe with flow sheet and reactions in manufacturing process for Soda Ash by Solvay process.

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3. Attempt **any four** : 16
- a) Draw only flow sheet for contact process.
 - b) List 4 uses of PCl_3 .
 - c) Write reactions involved in manufacture of Nitric Acid.
 - d) Draw a well labeled diagram of mercury cell.
 - e) Describe manufacture of gypsum.
 - f) Describe with diagram how water gas is prepared.
4. Attempt **any four** : 16
- a) Describe with flow sheet Stengel Process for Ammonium Nitrate.
 - b) Enlist the raw materials used for sulphuric acid production.
 - c) How air is liquified ? State 2 uses of Nitrogen and Oxygen each.
 - d) Describe Salt process for HCl production.
 - e) Compare between Dry and Wet process for Phosphoric Acid. (any 4 points).
 - f) Compare between dry and wet process for cement manufacture (any 4 points)
5. Attempt **any two** : 16
- a) Describe with flow sheet urea manufacture. Write reactions involved.
 - b) List processes for manufacture of hydrogen. Describe any one in detail.
 - c) Define Electrolysis and Calcination.
6. Attempt **any 4** : 16
- a) Why fertilisers play very important role in Indian agriculture ?
 - b) Compare between yellow and red phosphorous.
 - c) Enlist 4 uses of Hydrogen gas.
 - d) Define direct, indirect and mixed fertilisers. Give one example of each.
 - e) Draw a furnace used in production of Phosphorous.
 - f) Enlist sources of carbon Di-oxide. Enlist uses of CO_2 .
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