

Q.P. Code :26653

[Time: 3 Hours]

[ Marks:80]

Please check whether you have got the right question paper.

- N.B:
- 1) Question no 1 is compulsory.
  - 2) Solve any three questions from remaining five questions.
  - 3) Draw flow sheets and diagrams wherever necessary.

- Q.1
- a) Describe separation of xylene isomers. **8**
  - b) Differentiate between Catalytic reforming and catalytic cracking based on objective, process conditions and product span. **6**
  - c) Describe briefly how the processing conditions of ammonia synthesis have changed and the role of catalyst development in this change. **4**
  - d) What are the advantages of Steamcarbon process on other conventional processes for manufacture of Urea? **2**
- Q.2
- a) Describe DCDA process for sulfuric acid manufacture from elemental Sulphur with reference to:- **14**
    - i) Reactions involved
    - ii) Flow sheet
    - iii) Engineering problems associated
  - b) Describe manufacture of single superphosphate along with chemical reactions involved in it. What are the byproducts generated? How are they made harmless? **6**
- Q.3
- a) Describe the manufacturing process of nitric acid from ammonia by single pressure process. What is dual pressure process? Differentiate between single and dual pressure process? **10**
  - b) Describe manufacture of soda ash along with detail constructional and operational features of carbonating tower. Also discuss engineering problems involved in it. **10**
- Q.4
- a) Describe the manufacturing process of BTX from naphtha reformat. What are the solvents used in Udex process? Which solvent is preferred? Why? **10**
  - b) Why LLDPE is replacing LDPE in most applications? Explain with process flow diagram the manufacturing process of LLDPE. **10**
- Q.5
- a) Give two examples of alkylation. Describe manufacturing process of any one of them. **10**
  - b) Describe the manufacture of Phenol by cumene process with process flow diagram. **10**
- Q.6 Write short note on **20**
- a) Manufacture of biodiesel.
  - b) Dyes and intermediates
  - c) Effect of Raw material and role of steam in manufacture of ethylene.
  - d) Hydrogenation of oil

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