

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.

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| 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) Engineering problems involved in manufacture of HCl. | 4 |
| | d) What are the advantages of Stamicarbon process on other conventional processes for manufacture of Urea? | 2 |
| Q.2 | a) Describe manufacture of ammonia by steam reforming of naphtha. Why and how CO and CO ₂ are reduced to less than 10 ppm? Also discuss the effect of thermodynamic and kinetic parameters on ammonia synthesis. | 14 |
| | 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 acetic acid by methanol carbonylation. | 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) Agrochemical industry in India | |
| | c) Effect of Raw material and role of steam in manufacture of ethylene | |
| | d) Hydrogenation of oil | |
