

Inorganic Process Technology Paper - IV

P. Pages : 2

Time : Three Hours



TKN/KS/16/7824

Max. Marks : 80

- Notes :
1. All question carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Diagrams and chemical equations should be given whenever necessary.

1. a) Explain with neat flow sheet recovery of carbon dioxide from flue gases, giving the details of Girbotol amine process. **8**

b) Write a note on solid carbon dioxide (Dry Ice). **5**

OR

2. With neat flow sheet, explain the manufacture of hydrogen by catalytic reforming of hydrocarbons. **13**

3. Explain with flow sheet, and chemical reactions, Electric Furnace process for the manufacture of phosphoric acid. Compare it with wet process. **14**

OR

4. Describe the manufacture of sulphuric acid by contact process. Give its advantages over the chamber process. **14**

5. What are the different forms of Industrial carbon? Explain oil furnace process, With flow sheet for the manufacture of carbon black. Give its important industrial applications. **13**

OR

6. Mention the different white pigments. With the help of flow sheet explain the manufacture of lithophone. Give its properties and industrial applications **13**

7. a) With the help of neat flow sheet and chemical reactions, describe the manufacture of Bromine from sea water by steaming out process. **9**

b) Give the chemical reactions for the separation of different magnesium compounds from sea water. **4**

OR

8. a) With flow diagram explain the reprocessing of nuclear fuel. **8**

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| b) | Discuss the various methods used for the enrichment of uranium. Why is enrichment required? Give reason. | 5 |
| 9. | With flow diagram and chemical reactions, explain the manufacture of soda ash (Na_2CO_3) by modified Solvay's process (Dual process). | 13 |

OR

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| 10. | Mention the different types of electrolytic cells used in the manufacture of caustic soda and chlorine. Discuss in detail with diagram, the following,
a) Diaphragm cell b) Modern Mercury cell. | 13 |
| 11. | With the help of flow sheet, describe,

a) Stengel process for the manufacture of ammonium nitrate fertilizer.

b) Diammonium phosphate fertilizer. | 8

6 |

a) Diaphragm cell

b) Modern Mercury cell.

11. With the help of flow sheet, describe,
- a) Stengel process for the manufacture of ammonium nitrate fertilizer. 8
- b) Diammonium phosphate fertilizer. 6

a) Stengel process for the manufacture of ammonium nitrate fertilizer.

b) Diammonium phosphate fertilizer.

OR

- 12.** With flow sheet, explain the manufacture of ammonia by Haber's process. **14**
