

Code No: R05220803

Set No. 1

II B.Tech II Semester Regular Examinations, Apr/May 2008

CHEMICAL TECHNOLOGY

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Write about end uses of chlorine.
(b) Explain the manufacture of sodium carbonate by any process with the help of block diagram and mention reactions involved in it. [6+10]
2. (a) What is meant by cryogenics? Explain about liquefaction of gas with the help of Linde cycle.
(b) Explain in detail about shift converters in steam reforming process. [8+8]
3. (a) Draw a neat flow diagram for sulphuric acid manufacture indicating the components.
(b) Give the applications of alum. [10+6]
4. (a) Write short notes on:
 i. magnesium oxychloride cement
 ii. Pozzolans
(b) Explain the manufacture of lime. [8+8]
5. Describe any one method of manufacturing vinyl chloride. [16]
6. (a) Explain the purpose of refining the oils.
(b) Describe the hydrogenation of oils with equations. [8+8]
7. (a) What is soap? How does it differ from detergent?
(b) Explain the mechanism of cleaning using cleaning agent like soap or detergent. [8+8]
8. (a) What is a paper? List out different types of paper products.
(b) Discuss the environmental issues associated with paper industry. [6+10]

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Set No. 2

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CHEMICAL TECHNOLOGY

(Chemical Engineering)

Time: 3 hours

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**Answer any FIVE Questions
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1. (a) Write about end uses of chlorine.
(b) Explain the manufacture of sodium carbonate by any process with the help of block diagram and mention reactions involved in it. [6+10]
2. (a) Describe in detail the production of hydrogen by electrolytic method.
(b) Write the end uses of oxygen. [10+6]
3. (a) Write short notes on:
 i. Aluminum sulphate
 ii. Alum.
(b) Write all the chemical reactions occurring in the manufacturing of sulphur by Finnish process. [8+8]
4. What is cement? Explain the production of cement by cement rock beneficiation process with a flow diagram. [16]
5. (a) What is Styrene Butadiene Rubber?
(b) What are the properties of SBR?
(c) What are the uses of SBR? [4+8+4]
6. Discuss the following.
(a) Vegetable oil as a direct product and as a intermediate raw material.
(b) Briefly describe the solvent extraction of oils. [6+10]
7. Mention different methods for soap production and explain any method. [16]
8. Give a detail description of producing paper from pulp emphasize on process conditions. [16]

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Set No. 3

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CHEMICAL TECHNOLOGY

(Chemical Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
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1. (a) Explain the manufacture of Soda ash by Solvay process with flow diagrams and chemical reactions.
(b) Explain various processes used for the production of chlorine. [12+4]
2. (a) Name different sources for commercial production of carbon dioxide.
(b) Explain the production of hydrogen by coal gasification method. [6+10]
3. Discuss the production of sulphur by any process. [16]
4. Explain the production of magnesium hydroxide from sea water. [16]
5. Discuss the production of vinyl chloride by any one method, giving the process details. [16]
6. Describe the hydrogenation of vegetable oils along with the thermodynamic and kinetic aspects. [16]
7. What are the various steps involved in the production of final commercial soap starting from the basic raw materials? Explain them briefly. [16]
8. (a) List out various raw materials used for the production of pulp.
(b) What are the various steps generally involved in pulping process? Briefly explain them. [4+12]

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1. (a) Explain the working of Diaphragm Cell with a neat sketch.
(b) Write short notes on:
 - i. Fused Silica
 - ii. Soda lime glass
 - iii. Lead glass
 - iv. Borosilicate glass. [8+8]
2. Explain the production of ammonia by Kellogg process with a neat flow diagram. [16]
3. Explain the production of sulphur by elemental sulfur mining. [16]
4. Explain the production of magnesium hydroxide from sea water. [16]
5. Describe the production of vinyl chloride by oxychlorination method. [16]
6. (a) Discuss about the chemical composition of oils and fats.
(b) Describe the physical refining of the oils. [8+8]
7. What are the uses of soap? Explain the production of soap by any method. [16]
8. Describe the Kraft pulping process with block diagram. [16]
