Code No: RR320807 **Set No. 1**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
FERTILIZER TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Discuss the manufacture of metallurgical coke. [16]
2. Explain the merits and demerits of high and low temperature shift conversion processes. [16]
3. Name one chemical industry producing ammonia by partial oxidation process for fuel oil gasification process and explain the process in detail. [16]
4. (a) What are the raw materials for the production of Urea?
   (b) Explain the manufacturing process of Urea by ammonium carbomate decomposition process. [4+12]
5. Write short note on economics of
   (a) Ammonium Sulphate
   (b) Ammonium Sulphate nitrate. [16]
6. Write short note on:
   (a) Economics of tripple super phosphate industries
   (b) Engineering problems in tripple super phosphate industries. [16]
7. Write a note on the potash resources all over the world? [16]
8. Write a detailed note on nitrogenous-based fertilizer application on seasonal crop soils? [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320807 **Set No. 2**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
FERTILIZER TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Explain the proximate analysis of coal and its importance. [16]
2. Describe the gas purification methods. [16]
3. What is the nature of ammonia synthesis reaction? Explain in detail with flow sheet, if any. [16]
4. At what temperature is the equilibrium favored in the oxidation of NO to NO_2, which is a slow reaction? Explain in detail. [16]
5. Briefly discuss about the various methods available for manufacturing of Ammonium nitrate. [16]
6. Explain in detail electric furnace process for manufacturing phosphoric acid. [16]
7. Describe the quality control aspects in the mixed fertilizer industry? [16]
8. Write a detailed note on nitrogenous-based fertilizer application on seasonal crop soils? [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320807 **Set No. 3**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
FERTILIZER TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Describe the various processes available for the manufacture of Nitrogen. [16]
2. Discuss the application of various synthesis gases. [16]
3. Which process is used for the manufacture of Ammonia gas from coal? Explain. [16]
4. At what temperature is the equilibrium favored in the oxidation of NO to NO_2, which is a slow reaction? Explain in detail. [16]
5. Explain in detail the prilling process for manufacturing of Ammonium nitrate with neat flow diagram. [16]
6. Write short note on:
   (a) Economics of Superphosphate industries
   (b) Engineering problems in Super phosphate industries. [16]
7. Describe the quality control aspects in the mixed fertilizer industry? [16]
8. Write a detailed note on nitrogenous-based fertilizer application on seasonal crop soils? [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320807 **Set No. 4**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
FERTILIZER TECHNOLOGY
(Chemical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Describe the production of hydrogen by the combination of steam reforming and partial oxidation process. [16]
2. Explain the process of carbon monoxide removal. [16]
3. Describe in detail the by-product ammonia recovery by direct method. [16]
4. (a) What are the raw materials used for the manufacture of Nitric Acid?
   (b) Explain the manufacturing process for nitric acid. [6+10]
5. Discuss in detail the economics of manufacturing Ammonium Chloride. [16]
6. Compare and discuss the advantages and disadvantages in the various processes for manufacturing phosphoric acid. [16]
7. Write about the constitution of potassium in mineral soils? [16]
8. Make a balance sheet of production economies of typical fertilizer plant? [16]

⋆ ⋆ ⋆ ⋆ ⋆