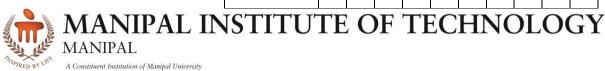
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VII SEMESTER B.TECH. (CHEMICAL ENGINEERING) MAKE UP EXAMINATIONS, JAN 2017

SUBJECT: CHEMICAL PROCESS INDUSTRIES [CHE 405] REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 100

Instructions to Candidates:

✤ Answer ANY FIVE FULL questions.

Missing data may be suitably assumed.

1A.	Discuss about the production of N_2 and O_2 by Linde's process with a neat flowsheet.	[08]
1B.	Explain the production of HCl from H_2 and Cl_2 . Also discuss about the kinetics and thermodynamics involved in the process.	[08]
1C.	Explain the working of Mercury cathode cell for the production of caustic soda and chlorine.	[04]
2A.	Discuss about the production of ammonia by Haber Bosch process with a neat flowsheet. Also mention its process design modifications.	[11]
2B.	Discuss about the production of urea with a neat flowsheet.	[09]
3A.	Discuss about the hydrogenation of oil with a neat flowsheet.	[08]
3B.	Discuss about the production of pulp by Kraft process with a neat flowsheet.	[08]
3C.	Discuss about the production of aryl-alkyl sulfonates.	[04]
4A.	Discuss about the production of starch from maize with a neat flowsheet.	[08]
4B.	Discuss about the fermentation process for the production of ethanol with a neat flowsheet.	[10]
4C.	Write a short note on inversion and caramelization of sugar.	[02]
5A.	Explain the production of viscose rayon with a neat flowsheet.	[08]
5B.	Discuss about the production of polyvinyl chloride from vinyl chloride monomer with a neat flowsheet.	[08]
5C.	Write a short note on additional processing of rubber.	[04]

6A.	Write a short note on the reaction mechanism involved in alkylation process.	[06]
6B.	Discuss about hydrocracking operation with a neat flowsheet.	[08]
6C.	What is cracking? What are its types? What are the operating condition pertaining to different types of cracking?	[06]