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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
A Constituent Institution of Manipal University

V SEMESTER B.TECH. (CHEMICAL ENGINEERING)

MAKE UP EXAMINATIONS, NOV/DEC 2016

SUBJECT: CHEMICAL PROCESS INDUSTRIES [CHE3104]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 100

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

1A.	Write four uses of CO ₂ .with the help of neat diagram explain the purification of CO ₂ .	6
1B.	Describe about classification of polymers based on functionality. Clearly explain the manufacture of rubber.	6
1C.	Write any four uses of alcohol. Draw a neat diagram and explain the manufacture of absolute alcohol from molasses.	8
2A.	Mention any four uses of N ₂ . Explain the manufacture of O ₂ by linde's process with a help of a neat diagram and reaction equations.	7
2B.	With the help of a neat diagram, explain the manufacture superphosphate using den's process. Write about handling and storage problems and kinetics of this method.	8
2C.	How do you define paper? Clearly explain the process of paper manufacture with a help of a neat diagram	5
3A.	Clearly explain the manufacture of sulfuric acid by contact process and also write any four uses of sulfuric acid.	6
3B.	With the help of neat flow diagram explain the manufacture of starch and Write about the four main condition favorable for fermentation process.	8
3C.	Explain the manufacture of polyethene with the help of neat diagram.	6
4A.	Write about the pretreatment of crude oil and clearly explain the petroleum distillation process.	8
4B.	Explain the manufacture of urea and write any three uses of urea.	7
4C.	Clearly explain kraft pulping process with the help of neat diagram and reactions.	5
5A.	Explain the manufacture of viscose rayon.	5
5B.	Write any three uses of NH ₃ and explain modified haber and bosch process for its manufacture.	7
5C.	Explain the manufacture of caustic soda by mercury cell process with a help of neat diagram and cell reactions. Write any four uses of Cl ₂ .	8

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