

Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

V SEMESTER B.TECH. (CHEMICAL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: CHEMICAL PROCESS INDUSTRIES [CHE3104]

REVISED CREDIT SYSTEM

(24/11/2016)

Time: 3 Hours

MAX. MARKS: 100

Instructions to Candidates:

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

1A.	What are strengths and weaknesses of Indian chemical Industry? Write about the recovery of CO ₂ by girbotol amine process.	6
1B.	Clearly explain the manufacture of viscose rayon with the help of a neat diagram. Describe about emulsion and suspension polymerization techniques.	6
1C.	Write about the four main conditions favorable for fermentation process. Draw a neat diagram and explain the manufacture of industrial alcohol by esterification and hydrolysis process.	8
2A.	What are the uses of synthesis gas? Explain the manufacture of H ₂ by lane's process with a help of a neat diagram and reaction equations.	7
2B.	With the help of a neat diagram, explain the manufacture of ammonium sulfate using gypsum process. Write any four uses of (NH ₄) ₂ SO ₄ .	8
2C.	What is hydrogenation of oil? Clearly explain the process with a help of a neat diagram.	5
3A.	Write the difference between soap and detergent. Explain the manufacture of soap by explaining each step clearly.	6
3B.	With the help of neat flow diagram explain the manufacture of sugar and write any four uses of starch in various industries.	8
3C.	What is nylon? Give the major difference between nylon 6 and 66. Explain the manufacture of nylon with the help of neat diagram.	6
4A.	Write about the pretreatment of crude oil and clearly explain the petroleum refining process.	8
4B.	Explain the manufacture of NH ₃ by Haber and Bosch process and write any three uses of NH ₃ .	7
4C.	What is a pulp and clearly explain about mechanical pulping process.	5
5A.	Give the chemical formula of PVC and explain its manufacturing process.	5
5B.	Write any three uses of H ₂ SO ₄ and explain lead chamber process for its manufacture	7
5C.	Explain the manufacture of Cl ₂ by diaphragm cell process with a help of neat diagram and cell reactions. Write any four uses of HCl.	8

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