Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A Constituent Institution of MAHE, Manipal)

END Semester EXAMINATIONS, NOV/DEC 2018

SUBJECT: CHEMICAL PROCESS INDUSTRIES [CHE3104]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A.	Explain the manufacture of SBR with the help of neat diagram.	**3**
1B.	Clearly explain the manufacture of urea with a help of neat flow diagram.	**3**
1C.	Draw a neat flow diagram for the manufacture of starch and explain the chemical recovery process in the manufacture of paper.	**4**
2A.	With the help of a neat flow diagram explain the manufacture of polyethylene.	**3**
2B.	Define fertilizers? What is the role of NPK in the growth of plants? Explain the manufacture of NH_4Cl from ammonia and HCl.	**4**
2C.	Draw the flow chart for the manufacture of acetone. Write any two uses of absolute alcohol. Write any two conditions that help in the growth of microbes for fermentation.	**3 (1+1+1)**
3A.	Explain the manufacture of Na_2CO_3 by Leblanc process with chemical reactions involved (no flow diagram needed).	**3**
3B.	Draw a neat flow diagram of petroleum refining process and explain any six units in the process.	**4**
3C.	Explain clearly the manufacture of Sulfur using frasch process and from pyrites.	**3**
4A.	Draw a neat diagram for the manufacture of HCl from its elements. Write the reaction equations for the manufacture of NaOH from diaphragm process. Explain the steam hydrocarbon process for the production of H_2.	**4 (1+1+2)**
4B.	Clearly explain the manufacture of nitric acid from ostwald's process with the help of a neat flow chart.	**3**
4C.	Explain the manufacture of industrial alcohol by esterification process with the help of neat diagram and reaction equations.	**3**
5A.	Write any two uses of CO_2 and draw the flow diagram for its manufacture.	**3 (1+2)**
5B.	With the help of neat diagrams explain any four polymerization methods.	**4**
5C.	Explain the contact process for the manufacture of H_2SO_4 with the help of flow diagram and reaction equations.	**3**