Reg No. _____

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH. (CHEMICAL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV-DEC 2018

SUBJECT: ELECTIVE-VI PETROCHEMICALS [CHE 4003]

REVISED CREDIT SYSTEM

Time: 3 hours Date of Exam: 01/12/2018 AN Max. Marks: 50

Instructions to Candidates

1. Answer ALL the questions.
2. To draw flow diagram use pencil and scale.
3. Each question carries equal marks (5X10=50)

		Marks
1 A	Mention the chemical equations (along with side reaction if any, catalyst and reaction conditions) for the production of following petrochemicals. a. Chloromethanes, b. Trichloroethylene, c. Vinyl chloride, d. Ethylene oxide	**4**
1B	Draw a neat flow sheet and explain the process for production of acetylene from calcium carbide along with reactions. Mention 4 major engineering problems of this process.	**6**
2A	Which aromatics is used in hydro-dealkylation process to produce benzene. Draw a neat flow sheet and explain the production process of benzene along with chemical reactions and two major engineering problems.	**6**
2B	Explain the process for the production of styrene from dehydrogenation of ethylbenzene with chemical reactions and a neat flow sheet.	**4**
3A	State 6 major differences among different polymerisation (bulk, solution, emulsion, suspension).	**3**
3B	Write a short note on suspension polymerisation process.	**2**
3C	Explain the process of the production of polyethylene by low pressure ziegler process with a neat flow sheet.	**5**
4A	Mention the names and draw the chemical structures of polypropylene based on the different stereotactic arrangement of pendent methyl group. State three uses of polystyrene.	**3**
4B	Discuss the production process of polycarbonates along with equations.	**3**
4C	Write down the process along with the chemical reactions involved for the production of Phenol-formaldehyde resin by using acid based catalyst.	**4**
5A	Discuss the production process of viscose rayon along with chemical equations.	**3**
5B	Discuss the production process of nylon 66 along with chemical reactions.	**3**
5C	Write down the production process and uses of neoprene and polybutadiene.	**4**