

Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. END SEMESTER EXAMINATIONS APR 2018

SUBJECT: PETROLEUM REFINERY ENGINEERING [CHE 4004]

REVISED CREDIT SYSTEM

(26/04/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ☒ Answer **ALL** the questions. ☒ Refer page 2 for formulae sheet. ☒ Assume any missing data suitably.

1A.	Write down the different exploration methods of crude oil. Explain any one method.	3
1B.	What is the importance of rotary drilling and rising system? Describe the same for deep sea drilling.	4
1C.	List out the tests and properties of diesel and describe any two tests.	3
2A.	Describe the fluidized bed catalytic cracking (FCC) process with a neat flow diagram.	8
2B.	How does the thermal balance maintained in FCC process?	2
3A.	What are the properties expected to change after hydrocarbons cracking?	2
3B.	Describe the two-stage hydrocracking process with a neat flow diagram.	8
4A.	Write about the reaction mechanism of C ₅ /C ₆ isomerization for less acid zeolite catalysts.	3
4B.	What are the feedstocks of alkylation? Explain the Cascade Sulfuric acid Alkylation process with a neat flow sheet.	5
4C.	What are the advantages of H ₂ SO ₄ process when compared to the HF alkylation process?	2
5A.	What are the acid gases? Why we need to treat acid gases?	2
5B.	Explain the hydrodesulphurization process with a neat flow sheet.	5
5C.	Discuss about the process chemistry and catalysts of hydrodesulphurization.	3

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