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Total number of printed pages – 2

B. Tech
PCCH 4403

Eighth Semester Regular Examination – 2015
PETROLEUM REFINERY ENGINEERING

BRANCH : CHEM

QUESTION CODE : J 306

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.*



1. Answer the following questions : 2 × 10
- (a) State the points against the favour of Engler's theory.
 - (b) What is stabilization ? Why it is done ?
 - (c) Define octane number and cetane number.
 - (d) What is pipe still heater ?
 - (e) What are the differences between cracking and reforming ?
 - (f) What are the advantages of visbreaking ?
 - (g) What is thermal cracking ? Give an example.
 - (h) What are the compositions of LPG ? Why mercaptan is added to LPG ?
 - (i) What is blending ? Why it is done for gasoline ?
 - (j) Write briefly about Furfural extraction.
2. (a) Explain in brief about the different theories for formation of crude petroleum in the earth crust. 6
- (b) Why Modern theory is widely accepted among all the theories ? 4

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3. (a) Why pre-treatment is essential before refining the crude petroleum ? 4
(b) Explain the different pre-treatment methods adopted by Indian refineries with neat flow diagram. 6
4. (a) What is cracking ? Describe the mechanism of thermal cracking process. 6
(b) Write the advantages of catalytic cracking over thermal cracking. 4
5. (a) Discuss various ways to inhibit coke formation. 3
(b) Explain briefly the coke formation during cracking operation. Describe about FCC process with neat diagram. 7
6. Define smoke point. Write its value for good quality kerosene. Explain Edeleanu process for the purification of kerosene with a neat flow diagram. 10
7. (a) What is Visbreaking process? Write the importance of Visbreaking process. 2
(b) Describe the visbreaking process in detail with a neat flow diagram. 8
8. Write short notes on any **two** : 5 × 2
(a) Reid vapor pressure
(b) Ball and ring test
(c) Integrated refinery
(d) ADU and VDU.

