

## Petroleum Refining Technology

BE/VII/CBGS/CHEM/PRT

28

QP Code : 6024

(3 Hours)

[ Total Marks : 80

- N.B. : (1) Question No.1 is compulsory  
 (2) Attempt any three questions out of the remaining five questions.  
 (3) Figures to the right indicate full marks.  
 (4) Neat diagrams must be drawn wherever necessary.

1. Explain and discuss the importance of following : 20
  - (a) Oxidation stability
  - (b) Cloude point and smoke point
  - (c) ASTM distillation and TBP distillation
  - (d) UOP characterization factor and correlation index
2. (a) Name the major oil fields in India. Explain the types of Indian crude oil on the basis of it's composition, sulfur content and API gravity. 10  
 (b) What is the importance of evaluation of crude oil and name the list of different products, with their boiling range, obtained from an oil refinery. 10
3. (a) Explain different tower arrangement used for crude distillation unit, with a suitable diagram. 10  
 (b) What are the different additives used in gasoline, mentioning their specific use. 10
4. (a) Name the sulfur compound present in crude oil. Explain any one method to remove sulfur with a suitable diagram. 10  
 (b) What is meant by overhead corrosion in crude distillation tower unit. Explain briefly what measures can be taken to prevent the same. 10
5. (a) What is the importance of cracking process in refinery? Describe the process of hydrocracking in detail with suitable diagram. 10  
 (b) Explain catalytic reforming process stating, reactions, operating condition and catalyst used, with suitable diagram. 10
6. (a) Differentiate between HF acid and sulfuric acid alkylation process. 10  
 (b) Differentiae between bio-refinery and petroleum refinery. Write short notes on Ethanol as a bio-fuel. 10