B.E./B.TECH. Degree Examination, September 2020

Semester - VIII

CH16013 – PETROLEUM TECHNOLOGY

(Regulation 2016)

Time: Three hours Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Which of the following has maximum hydrogen/carbon ratio (by weight)?
   A) Naphtha B) Petrol
   C) Diesel D) Fuel oil
2. How can we regenerate alumina-silica catalyst?
   A) By increasing the particles of coke on the catalyst
   B) By increasing the amount of catalyst
   C) By decreasing the particles of coke on the catalyst
   D) By making it react with suitable anion or cation
3. Increased pressure in the reactor used for reforming will
   A) Decreases coke formation. B) Enhances the rate of reaction.
   C) increases the octane number of gasoline. D) None of these.
4. The process of hydrofining is mostly used for
   A) Removal of sulphur B) Improvement of smoke point
   C) Reduction of breathing loss D) Improvement of viscosity index
5. Clarify the significance of Vacuum Distillation process. Why is it necessary?
6. Comment on the advantages of FCC process.
7. Mention the advantages of alcohol Gasoline blends in IC engines.
8. Enumerate any four properties of lubricating oils.

PART B - (4 X16 = 64 marks)

09. (a) Present the distillation range of naphtha and explain the method of manufacture of naphtha and the process of separation of naphtha from crude with a neat flowsheet. **(16)**

(OR)

(b) Compare the thermal cracking processes available for heavy distillates and explain the coke manufacturing process in detail with neat diagram **(16)**

10. (a) Analyse the different catalytic cracking methods and explain in detail, about the reactor regenerator processes, along with the product profile. **(16)**

(OR)

(b) Explain the process used for desulphurization and smoke point improvement with a neat flow diagram **(16)**

11. (a) Compare different alkylation techniques and explain any one with a neat flow diagram **(16)**

(OR)

(b) (i) Explain Gasoline Blending. **(6)**
(ii) Discuss the process of enhancement of gasoline with neat diagram **(10)**

12. (a) Enumerate the processes used for the treatment of lubricating oils and explain any one process used for improving the cloud and pour points with a neat diagram **(16)**

(OR)

(b) Describe the dearomatisation of lube base stocks to manufacture high viscosity index lubricants with a neat diagram. Also enumerate the additives for lube oils, with their applications. **(16)**