B. Tech.

(SEM. VIII) EXAMINATION, 2006-07

PETROLEUM & ITS PRODUCTS

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions. All questions carry equal
    marks.

1 Attempt any two of the following :
   (a) Give a brief account of chemical composition of
       petroleum crude and its impact on various
       petroleum refining operations. 10
   (b) What are the various test methods used for
       refinery products? Also discuss the significance
       of each test method. 10
   (c) Give the composition, properties and
       applications of Gasoline. Also discuss the role
       of various additives used in gasoline. 10

2 Attempt any two of the following :
   (a) Discuss the utility of Alkylation and
       Isomerization in petroleum industry and explain
       any process of Alkylation with the help of a
       neat flow diagram. 10

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(b) What is the significance of Catalytic Polymerization in petroleum industry? Also explain a process of Catalytic Polymerization with the help of a neat flow diagram.

(c) Write short notes on:
(i) Micro Crystalline Wax
(ii) Fluid Catalytic Cracking.

3 Attempt any four of the following:
(a) Define lubricants and discuss its various functions.
(b) What is the significance of Hydrotreating in petroleum industry?
(c) What do you understand by Napthas? Also give its composition and industrial uses.
(d) Discuss the origin and mode of occurrence of petroleum crude.
(e) Give the composition, properties and uses of Kerosene.
(f) Define lubricating greases. Also discuss the various parameters that influence the selection of lubricating greases.

4 Attempt any two of the following:
(a) Discuss the role of Oxidation Inhibitors, Viscosity Index Improvers and Pour Point Depressants as additives in lubricating oils. Also give examples of each additive.
(b) What are the various types of lubricating greases. Explain calcium base lubricating grease in detail.

(c) With the help of neat flow diagram explain the process of re-refining of spent lube oils. Also explain the significance of re-refining of spent lubricating oils.

5 Attempt any two of the following:

(a) Give a list of various petrochemicals derived from Methane. Also give their industrial applications.

(b) Write short notes on the following:
   (i) Manufacture of Butadiene
   (ii) Microcrystalline waxes.

(c) Describe the method of manufacture of Vinyl Chloride. Also discuss its industrial applications.