Printed Pages : 1 Roll No. NAU602

B. TECH.

THEORY EXAMINATION (SEM–VI) 2016-17

AUTOMOTIVE FUELS AND LUBRICANTS

Time : 3 Hours *Max. Marks : 100*

Note : Be precise in your answer.

SECTION – A

1. Attempt all parts of the following questions: 10 x 2 = 20

(a) Define the term flash point.

(b) Differentiate between drop point and pour point.

(c) Explain viscosity of lubricating oil.

(d) Write the classification of specific fuels.

(e) Write the compositions gases in CNG.

(f) Define the calorific value of a fuel.

(g) Define the thermo-chemistry of a fuel.

(h) Define the cetane number.

(i) What is the physical concept of diesel index?

(j) Give the classification of petroleum fuels?

SECTION – B

2. Attempt any five parts of the following questions: 5 x 10 = 50

(a) Explain the thermo of fuels with examples and reactions and how it works.

(b) Define the cracking. How thermal cracking and catalytic cracking are important for refining.

(c) Explain the affect of flames in S I and C I engines with neat sketch.

(d) Explain the need of alternative fuel for automobile and what is the feature of alternative fuel in India?

(e) Explain the phenomenon of knocking in S I engines. What are the different factors which influence the knocking?

(f) Explain the dry sump and wet sump lubrication system used in automotive engine.

(g) Explain Reid vapour pressure test for fuels with neat sketch.

(h) **Write short note on:-**

(i) Deterioration

(ii) Importance of fuel additives

SECTION – C

Attempt any two parts of the following questions: 2 x 15 = 30

3. Explain the suitability of CNG in conventional diesel engine and show the various results through graphs, both in CNG and diesel modes.

4. Explain the hydro-dynamic lubricating system. What are the advantages and disadvantages of this system?

5. Discuss the various properties of automotive fuels. Explain the various engine operating conditions which depend upon the volatility of fuel.