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**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.