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(2064)

14636

B. Tech 4th Semester Examination

Auto Fuels & Lubrication (N.S.)

AU-221

Time : 3 Hours

Max. Marks : 100

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt one question from section A, B, C & D. Section E is compulsory.

**SECTION - A**

1. Explain thermal cracking and catalytic cracking, polymerization and alkylation isomerisation. (15)
2. Explain various methods of testing of fuels and lubricants. (15)

**SECTION - B**

3. Compare phenomenon of abnormal combustion in SI and Diesel engines. (15)
4. What are additives? What is mechanism and requirement of additives? (15)

**SECTION - C**

5. Explain in detail alternative energy sources. (15)
6. (a) Classify lubricating oils on SAE basis.  
(b) Discuss characteristics of lubricating oils. (15)

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**SECTION - D**

7. (a) Explain design of lubricating system.  
(b) Explain bearing lubrication. (15)
8. (a) What is meant by total engine friction?  
(b) Explain advantages of synthetic lubricants. (15)

**SECTION - E**

9. (i) What is viscosity index?  
(ii) What is fire point?  
(iii) How are greases classified?  
(iv) Discuss various types of lubrication system.  
(v) Explain Elasto hydro dynamic lubrication.  
(vi) Explain advantages of using alcohols as alternative fuels.  
(vii) What is Octane rating of fuel?  
(viii) Explain phenomenon of Diesel knock.  
(ix) Explain the advantages of fuel cells.  
(x) Explain additive use in lubricants. (4×10=40)