



Register Number: .....

**B.E DEGREE EXAMINATIONS: NOV/DEC 2014**

(Regulation 2009)

Fifth Semester

**AUTOMOBILE ENGINEERING**

AUE110: Fuels and Lubricants

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

- Which of the following belong to petroleum group
  - paraffins
  - olefins
  - naphthenes
  - All
- Catalytic cracking gives better ----- property gasoline compared to thermal cracking
  - Anti-knock
  - Anti oxidant
  - Anti corrosion
  - Anti acidic
- Presence of ----- in a dry gaseous fuel does not contribute to its calorific value
  - nitrogen
  - oxygen
  - hydrogen
  - carbon
- Stoichiometric air fuel ratio of SI engine is
  - 12:1
  - 10:1
  - 22:1
  - 14.7:1
- Orsat apparatus is used for
  - Finding calorific value
  - Flue gas analysis
  - Finding ash content
  - Fuel analysis
- 1 kg of C combines with  $\frac{8}{3}$  kg of  $O_2$  gives ----- kg of  $CO_2$ 
  - $\frac{11}{3}$
  - $\frac{3}{11}$
  - $\frac{22}{3}$
  - $\frac{9}{3}$
- Which of the following is to find frictional power of the engine
  - Motoring Test
  - Morse Test



b) Write the fundamental chemical equations to calculate the oxygen requirement and the amount of gas produced by the combustion. Also write the method of calculating calorific value of a fuel.

24. a) Explain in detail the effects of engine variables on friction.

**(OR)**

b) Explain the theory of lubrication and distinguish between hydrostatic and hydrodynamic lubrication.

25. a) Explain the properties of lubricating oil and classify the lubricating oil.

**(OR)**

b) What are the tests required to test the lubricants-Explain.

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