Reg. No.:

Question Paper Code: 91098

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fifth Semester

Automobile Engineering

AT 2305/AU 54/10122 AU 506 - AUTOMOTIVE FUELS AND LUBRICANTS

(Regulation 2008/2010)

Time: Three hours

Maximum: 100 marks

Answer ALL questions.

PART A — $(10 \times 2 = 20 \text{ marks})$

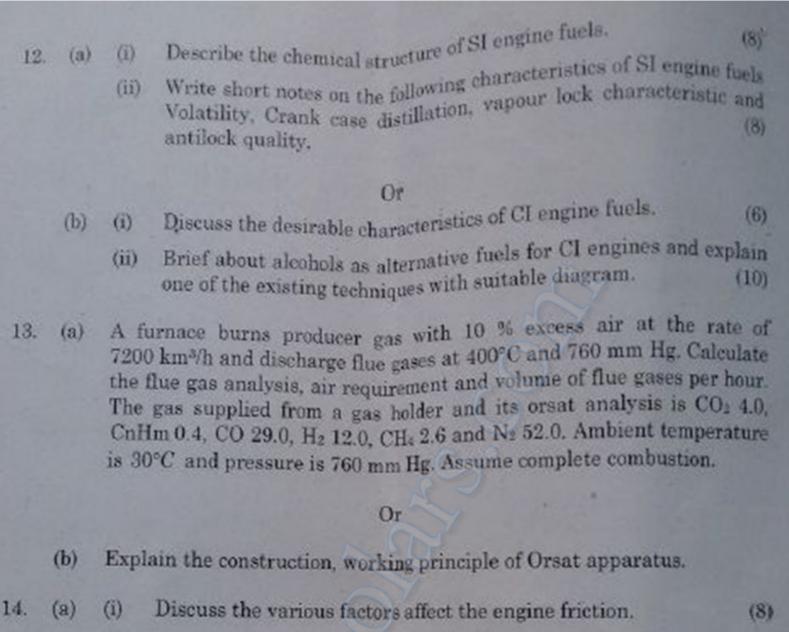
- 1. List the composition of petroleum and classify the same.
- 2. What is meant by isonierization changes in the petroleum refining process?
- 3. Give the chemical formula of the aromatic fuel.
- 4. Brief about cetane rating.
- 5. What is meant by theoretical air and excess air in the combustion process?
- 6. Write briefly about biogas.
- Give different frictional losses and the associated components in automotive engines.
- 8. List the main functions of the lubricating system.
- 9. Mention the important properties of lubricants.
- 10. Give the classification of grease.

PART B - (5 x 16 = 80 marks)

(a) Discuss the following petroleum refining process with suitable diagrams.
(i) Petroleum distillation (ii) Cracking break down process.

Or

(b) Discuss the various process involved in the making of lubricants with suitable diagrams also list various components and their relevant lubricants used in automotive components.



(ii) Discuss about elastohydrodynamic lubrication.

Or

(b) Explain the formation of lubricant film in journal bearing with the help of suitable sketches.

(8)

 (a) Describe different additives and its properties added in the lubricants to achieve the desired properties.

Or

(b) Discuss about the various testing methods for lubricants and grease.