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**B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019**

Third Semester

**AE16301 – AUTOMOTIVE ENGINES***(Automobile Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	<b>CO</b>	<b>RBT</b>
1. Define Compression ratio.	<b>1</b>	<b>R</b>
2. Define the term "cut-off" related to Diesel cycle.	<b>1</b>	<b>R</b>
3. What do you mean by Stoichiometric air fuel ratio?	<b>2</b>	<b>U</b>
4. What is the function of governor in IC engines?	<b>2</b>	<b>R</b>
5. Differentiate between homogeneous and heterogeneous mixture.	<b>3</b>	<b>R</b>
6. Define the terms Squish and Tumble related to combustion.	<b>3</b>	<b>R</b>
7. What are the advantages of supercharging?	<b>4</b>	<b>R</b>
8. Define friction power. What is the effect of engine speed on friction power?	<b>4</b>	<b>U</b>
9. Write any two advantages of liquid cooling system.	<b>5</b>	<b>R</b>
10. Give any four properties of lubricants.	<b>5</b>	<b>R</b>

**PART B - (5 X16 = 80 Marks)**

11. (a) With the help of a neat sketch explain the working principle of a two stroke SI engine and compare two stroke and four stroke engines. **(16)** **1** **U**
- (OR)**
- (b) Explain the construction details of a four stroke CI engine with the help of suitable diagrams. **(16)** **1** **U**
12. (a) Explain the working principles of a Multi Point Fuel Injection system with the help of a neat sketch. **(16)** **2** **U**
- (OR)**
- (b) Explain the working principle and operation of Jerk type of Fuel Injection Pump. **(16)** **2** **U**

13. (a) Explain knock formation in SI and CI engines and the factors affecting the knock. **(16) 3 U**
- (OR)**
- (b) Explain briefly different types of SI engines combustion chambers with neat sketches. **(16) 3 U**
14. (a) Briefly explain various loading devices used in testing of IC engines. **(16) 4 U**
- (OR)**
- (b) Explain the principles and working of a Turbocharger with the help of neat sketch. **(16) 4 U**
15. (a) Explain the reasons for cooling an engine and discuss about the cooling system used in modern heavy automotive vehicles. **(16) 5 U**
- (OR)**
- (b) Write short notes on (i) Properties of coolants, (ii) Purpose of lubrication and (iii) Mist lubrication system. **(16) 5 U**