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10ME844

**Eighth Semester B.E. Degree Examination, June / July 2014**  
**Automotive Engineering**

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.

**PART - A**

1. a. Compute wet and dry liners in automotive engines. (04 Marks)  
b. What are the functions of piston rings and explain with diagram the operation of piston rings? (08 Marks)  
c. Sketch any two type piston design to keep heat away from lower part of piston. (08 Marks)
2. a. What is Octane and Cetane ratings for gasoline and diesel fuel? (04 Marks)  
b. Explain with sketch working of cartels carburetor. (08 Marks)  
c. Explain with diagram working of A.C mechanical fuel pump (08 Marks)
3. a. Distinguish between supercharging and turbocharging. (04 Marks)  
b. What is turbo charger lag and explain how it can be controlled? (06 Marks)  
c. Explain different methods of supercharging. (10 Marks)
4. a. Draw neat circuit diagram of battery ignition system and explain functions of various devices in circuit. (10 Marks)  
b. With neat circuit diagram, explain the principles of electronic ignition system. (06 Marks)  
c. What is ignition advance and list the factors affecting ignition advance? (04 Marks)

**PART - B**

5. a. Mention any four requirements of clutch for transmission of torque. (03 Marks)  
b. Explain with neat diagram working of single plate clutch. (07 Marks)  
c. Explain with diagram working of constant mesh gear box and mention its advantages over sliding mesh gear box. (10 Marks)
6. a. What is the function of differential and explain its operation with neat diagram. (10 Marks)  
b. What is camber and mention the effects of positive camber? (06 Marks)  
c. Mention the advantages of power steering. (04 Marks)
7. a. Explain with schematic diagram the air suspension system. Mention its advantages and disadvantages. (10 Marks)  
b. Explain with diagram, the working of hydraulic braking system. (08 Marks)  
c. What is Anti – lock Bracking system (ABS)? (02 Marks)
8. a. Briefly explain crankcase emissions controlling. (04 Marks)  
b. Explain with diagram the Exhaust Gas Circulation System (EGR). (08 Marks)  
c. What is catalytic converter? How they are helpful in reducing exhaust gas emission? Explain the 3 – way catalytic converter system. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.