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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 jets 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.