

# CBCS SCHEME

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15ME655

**Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020**

## Automobile Engineering

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. Explain the different types of combustion chambers used in CI engine. (08 Marks)
- b. Explain with a neat diagram the lubricating system used in a multi-cylinder engine. (08 Marks)

OR

- 2 a. Explain the significance of valve timing in compression ignition engine with a suitable diagram. (08 Marks)
- b. Discuss the working of HCCI engine. (08 Marks)

### Module-2

- 3 a. Explain with a neat sketch the working of torque converter. (08 Marks)
- b. Explain Hotchkiss drive with a neat sketch. (08 Marks)

OR

- 4 a. Explain with a neat sketch the working of hydraulic brake system. (08 Marks)
- b. Explain with a neat sketch the working of synchronizing unit of a synchromesh gear box. (08 Marks)

### Module-3

- 5 a. Explain with a neat diagram the working of battery ignition system of a multi-cylinder engine. (08 Marks)
- b. Explain with a neat sketch working of air suspension system. (08 Marks)

OR

- 6 a. Explain with a neat diagram the working of electronic ignition system. (08 Marks)
- b. Explain the working of power steering system with a diagram. (08 Marks)

### Module-4

- 7 a. Explain the working of common Rail Direct Injection system (RDI) with a neat diagram. (08 Marks)
- b. Explain the working of turbocharger with a neat diagram. (08 Marks)

OR

- 8 a. Explain the Air fuel ratios for different speeds of a Car with a suitable diagram. (08 Marks)
- b. List the alternate fuels for compression ignition engine and explain any two. (08 Marks)

### Module-5

- 9 a. Explain how EGR (Exhaust Gas Recirculation) system reduces emission of NO (Oxide of Nitrogen). (08 Marks)
- b. Explain with a neat diagram, evaporative loss control system. (08 Marks)

OR

- 10 a. Explain the working of catalytic converter with the help of a neat sketch. (08 Marks)
- b. List the different emission for compression ignition engine and explain the reasons for the formation of these emissions. (08 Marks)