

# CBCS Scheme

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15AU44

Fourth Semester B.E. Degree Examination, June/July 2017

## Automotive Engines

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. What is an engine? Write the classification of I.C. engine. (04 Marks)  
b. Explain different engine component with neat sketch. (06 Marks)  
c. Explain with neat sketch construction and working of two-stroke SI engine. (06 Marks)

OR

- 2 a. With the help of a neat sketch, explain the construction and working of four stroke compression ignition (C.I) engine. (08 Marks)  
b. Write the comparison between:  
i) Two stroke and four stroke engine  
ii) Diesel and petrol engine. (08 Marks)

### Module-2

- 3 a. With the help of a neat sketch, explain construction and working of simple carburetor. (08 Marks)  
b. Explain with neat sketch,  
i) Pintle nozzle  
ii) Pintause nozzle. (08 Marks)

OR

- 4 a. Sketch and explain the common rail diesel injection (CRDI) system and also list the merits and demerits. (08 Marks)  
b. What is governor? Explain the construction and working of pneumatic governor. (08 Marks)

### Module-3

- 5 a. What is combustion? With a neat sketch, explain the stages of combustion of compression ignition (CI) engine. (08 Marks)  
b. Write short notes on:  
i) Swirl chamber  
ii) Squish. (08 Marks)

OR

- 6 a. Explain the factors affecting flame propagation in S.I. engine. (08 Marks)  
b. Explain the factors affecting delay period in C.I. engine. (08 Marks)

### Module-4

- 7 a. Explain with neat sketch, construction and working of turbo charging with intercooler. (08 Marks)  
b. Explain thermosymphon cooling system with neat sketch. (08 Marks)

OR

- 8 a. Classify the types of cooling system and explain force feed cooling system with neat sketch. (08 Marks)  
b. Write the comparison between air cooling and water cooling system. (08 Marks)

Module-5

- 9 a. Explain with neat sketch, full pressure type of wet sump lubrication system for four stroke engine. (08 Marks)  
b. List and explain the properties of lubricating oil. (08 Marks)

OR

- 10 a. Explain the splash system of wet sump lubrication system, with a neat sketch. (08 Marks)  
b. Define and differentiate between:  
i) Boundary lubrication  
ii) Hydrodynamic lubrication  
iii) Elasto hydrodynamics lubrication (08 Marks)

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