

CBCS Scheme

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Fourth Semester B.E. Degree Examination, Dec.2017/Jan.2018 Automotive Engines

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 working principle of a two stroke engine with suitable sketches. (08 Marks)
b. Compare the four stroke and two stroke engines. (08 Marks)

OR

- 2 a. Draw an actual valve timing diagram for low speed four stroke SI engine. Explain in brief. (08 Marks)
b. Derive an expression for thermal efficiency of the diesel cycle. (08 Marks)

Module-2

- 3 a. What is the function of carburetor? Explain with a neat sketch the operation of a simple carburetor. (08 Marks)
b. What are the advantages and disadvantages of petrol injection system. (08 Marks)

OR

- 4 a. Explain common rail and distributor pump injection systems with neat sketches. (10 Marks)
b. Explain the working principle of a mechanical governor with a neat sketch. (06 Marks)

Module-3

- 5 a. Describe the various stages of combustion in SI engine with the help of pressure crank angle diagram. (08 Marks)
b. Explain the effect of engine variables on flame propagation in brief. (08 Marks)

OR

- 6 a. Describe the phenomenon of knocking or detonation in diesel engines. What are the methods of controlling diesel knock? (08 Marks)
b. What are the advantages and disadvantages of induction swirl in CI engines. (08 Marks)

Module-4

- 7 a. Explain the effects of supercharging on performance of the engine. (06 Marks)
b. Explain two stage turbocharging and hyperbar turbocharging with neat sketches. (10 Marks)

OR

- 8 a. Describe Thermo – Syphon cooling system with a neat sketch. (08 Marks)
b. What are the advantages and disadvantages of water cooled engines. (08 Marks)

Module-5

- 9 a. What are the various requirements of an ideal gasoline? (06 Marks)
b. Define octane number and cetane number of the fuel. Explain how they are measured in a single cylinder test. (06 Marks)

OR

- 10 a. Explain the full pressure type wet sump lubrication system with a neat sketch. (08 Marks)
b. What are the important properties of a lubricating oil. Explain in brief. (08 Marks)

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