

# CBCS SCHEME

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## Fourth Semester B.E. Degree Examination, June/July 2019 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. With the help of a neat sketch, explain the construction and working of 4-stroke S.I. engine. (08 Marks)  
b. Write the comparison between two stroke and four stroke engine. (08 Marks)

OR

- 2 a. Explain with a neat sketch, construction and working of 4-stroke C.I. engine. (08 Marks)  
b. Write actual and theoretical valve timing diagram for 4-stroke S.I. engine. (08 Marks)

### Module-2

- 3 a. Explain with a neat sketch, solex carburetor. (08 Marks)  
b. Write the Airfuel ratio requirements of SI engines. (08 Marks)

OR

- 4 a. Explain the construction and working of Common Rail Diesel Injection (CRDI) system. (08 Marks)  
b. Write a short note on:  
i) Pintle nozzle  
ii) Pintaux nozzle. (08 Marks)

### Module-3

- 5 a. Explain the stages of combustion in SI engine. (08 Marks)  
b. Write the factors effecting ignition lag and flame propagation in SI engine. (08 Marks)

OR

- 6 Write a short note on:  
a. Factors effecting delay period  
b. Uncontrolled combustion in CI engine  
c. Importance of swirl in CI engine  
d. Turbulence in CI engine. (16 Marks)

### Module-4

- 7 a. Explain with a neat sketch, force or pressure feed cooling system. (08 Marks)  
b. With the help of a neat sketch explain turbo charger with intercooler. (08 Marks)

OR

- 8 a. Write a short note on:  
i) Turbo charger  
ii) Super charger. (08 Marks)  
b. Explain the construction and working of Thermo-symphon cooling system. (08 Marks)

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.



**Module-5**

- 9 a. Explain any 8 properties of lubricants. (08 Marks)  
b. Explain with a neat sketch splash lubrication system. (08 Marks)

**OR**

- 10 a. With the help of a neat sketch explain pressure feed lubrication system. (08 Marks)  
b. Write a note on:  
i) Boundary lubrication  
ii) Hydrodynamic lubrication  
iii) Elasto hydrodynamic lubrication  
iv) Mixed film lubrication. (08 Marks)

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