

# CBCS SCHEME



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15ME655

## Sixth Semester B.E. Degree Examination, June/July 2018 Automobile Engineering

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. List the components of automotive engine. Mention their functions and materials used for manufacturing. (06 Marks)  
b. With neat sketch explain the working of thermosiphon cooling system. (06 Marks)  
c. What is the necessity of engine cooling? (04 Marks)

OR

- 2 a. What is the purpose of lubrication for an IC engine? Explain any one type of lubrication system. (07 Marks)  
b. What is the difference between a dry liner and wet liner? (06 Marks)  
c. What are the functions of piston rings to perform in an engine? (03 Marks)

### Module-2

- 3 a. What are the requirements of a clutch? And with neat sketch explain the working of cone clutch. (07 Marks)  
b. Explain the purpose and operation of antilock braking system. (06 Marks)  
c. What is the principle of automatic transmission? (03 Marks)

OR

- 4 a. Explain with neat sketch:  
(i) Propeller shaft (ii) Universal joint. (08 Marks)  
b. With neat sketch, briefly describe the construction and working of hydraulic brake. (08 Marks)

### Module-3

- 5 a. Explain the working of power steering. (04 Marks)  
b. What are the differences between Battery ignition system and Magneto ignition system? (06 Marks)  
c. Explain with neat sketch: (i) Leaf spring (ii) Coil spring (06 Marks)

OR

- 6 a. What are the types of ignition systems? Describe with diagram the battery ignition system. (08 Marks)  
b. A motor car has a wheel base of 2.743 m and pivot centre of 1.065 m. The front and rear wheel track is 1.217 m. Calculate the correct angle of outside lock and turning circle radius of the outer front and inner rear wheels, when the angle of inside lock is 40°. (08 Marks)

### Module-4

- 7 a. Distinguish between supercharging and turbocharging. (06 Marks)  
b. List out the various alternative fuels and briefly explain on cetane and octane numbers. (10 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.



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OR

- 8 a. Explain different methods of supercharging. (08 Marks)
- b. With a neat sketch, explain the different circuits of Carter carburetor. (08 Marks)

Module-5

- 9 a. Briefly explain different types of emission from IC engines. (08 Marks)
- b. What are different emission standards? Explain Briefly. (08 Marks)

OR

- 10 a. What are catalytic converters? How they are helpful in reducing HC, CO and NO<sub>x</sub> emissions. (08 Marks)
- b. Write a note on Motor vehicle act. (08 Marks)

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