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10ME844

**Eighth Semester B.E. Degree Examination, Feb./Mar. 2022**  
**Automotive Engineering**

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.

**PART – A**

- 1 a. Differentiate between Wet Linear and Dry Liners. (04 Marks)  
b. With a neat sketch, explain the working principle of Thermosyphon cooling system. What are its limitations? (08 Marks)  
c. Explain with neat sketch the dry sump Lubrication system. (08 Marks)
- 2 a. Define the terms Octane number and Centane number. (02 Marks)  
b. How are Carburetors Classified? Explain with a neat sketch the working of a S.U. Carburettor. (10 Marks)  
c. Explain with a neat diagram working of a A.C Mechanical fuel pump. (08 Marks)
- 3 a. Distinguish between supercharging and Turbocharging. (04 Marks)  
b. What are purposes of supercharging the I.C engines? With neat sketch, Explain any two types of super chargers. (10 Marks)  
c. What is turbo charger Lag and explain how it can be controlled. (06 Marks)
- 4 a. What are the requirements of an Ignition system? (04 Marks)  
b. Draw a neat circuit diagram of battery ignition system and explain functions of various devices in circuits. (08 Marks)  
c. Explain the working of centrifugal Advance mechanism and Vacuum Advance Mechanism. (08 Marks)

**PART – B**

- 5 a. Mention any four requirements of Clutch for transmission of torque. (04 Marks)  
b. Explain with a neat diagram the working of a Multiplate clutch. (08 Marks)  
c. What is an over drive? Sketch and explain its working. (08 Marks)
- 6 a. With neat sketch, explain Hotchkiss Drive Mechanism. (08 Marks)  
b. What is Castor and mention its effects? (04 Marks)  
c. The wheel base of a Car is 2.7m and pivot centers are at 1 meter. The wheel Track is 1.2m. 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)
- 7 a. Explain with a Schematic diagram the wishbone type independent front wheel suspension system. (06 Marks)  
b. Give comparison between disc brakes and drum brakes. (06 Marks)  
c. Explain with diagram the working of hydraulic braking system. (08 Marks)
- 8 a. What are sources of emissions from SI engines? (04 Marks)  
b. Explain with diagram the Exhaust Gas Recirculation System (EGR). (08 Marks)  
c. Write short notes on : i) Crank Case Emission Control ii) Catalytic Converter. (08 Marks)

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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.