

Code: 20ME4601E

**III B.Tech - II Semester – Regular / Supplementary Examinations
APRIL 2024**

**AUTOMOBILE ENGINEERING
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Illustrate the lay-out of an automobile and explain the functionality of various sub-systems in it.	L2	CO1	7 M
	b)	Differentiate rear wheel, front wheel and four-wheel drive.	L3	CO2	7 M
OR					
2	a)	Discuss the mechanism of splash lubrication system with a neat sketch.	L2	CO2	7 M
	b)	What is turbocharging and how it's different from super charging?	L3	CO2	7 M
UNIT-II					
3	a)	Describe the working of an electric fuel pump.	L2	CO2	7 M

	b)	Discuss the structure of fuel spray in diesel engines.	L3	CO2	7 M
OR					
4	a)	Enumerate the working of the battery Ignition System.	L3	CO2	7 M
	b)	Explain the thermosyphon cooling system.	L2	CO2	7 M
UNIT-III					
5	a)	List out various requirements of a Clutch. Write the properties of a good clutch lining.	L2	CO3	7 M
	b)	Explain the working of a Constant mesh gear box with a neat sketch.	L2	CO3	7 M
OR					
6	a)	State the purpose of Differential. Explain Simple Differential with a schematic diagram.	L3	CO3	7 M
	b)	Discuss about the Torsion bar with a neat sketch.	L2	CO3	7 M
UNIT-IV					
7	a)	Describe the construction and operation of mechanical breaking system with a neat sketch.	L2	CO3	7 M
	b)	Write the advantages and disadvantages of Hydraulic brakes. Explain the construction of wheel cylinder with a neat sketch.	L3	CO3	7 M
OR					

8	a)	What is the need and principle of steering? Explain recirculating ball steering gear with neat a sketch.	L3	CO3	7 M
	b)	Explain the Ackerman steering mechanism with neat diagram.	L2	CO3	7 M
UNIT-V					
9	a)	Explain CRDI with suitable block diagram with its advantages over conventional system.	L3	CO4	7 M
	b)	How do charging circuit works?	L2	CO3	7 M
OR					
10	a)	Write short notes on various alternate fuels to reduce the pollution.	L3	CO4	7 M
	b)	Discuss the application of plastic in various interior and occupant safety parts of an automobile.	L3	CO4	7 M