

Code: 19ME4801A

IV B.Tech - II Semester – Regular Examinations – MAY 2023

**AUTOMOBILE ENGINEERING
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

PART – A

		BL	CO
1. a)	Write any four major components of an automobile (Four Wheeler).	L1	CO1
1. b)	Write any two advantages of Battery ignition system.	L1	CO2
1. c)	Classify types of clutches.	L1	CO3
1. d)	Explain the purpose of a steering gear mechanism.	L1	CO3
1. e)	List out any two significant causes for emission of hydrocarbons from an automobile.	L1	CO4

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Explain how a four wheel drive mechanism offers better power transmission in a automobile.	L2	CO1	6 M

	b)	With the help of a neat sketch explain Splash Lubrication system. Also discuss its advantages and disadvantages.	L2	CO2	6 M
OR					
3	a)	Discuss the functions of the (i) flywheel (ii) Crankshaft (iii) Connecting rod	L2	CO1	6 M
	b)	With a neat sketch explain working principle of a pressurized lubrication system.	L2	CO2	6 M
UNIT-II					
4	a)	With a neat sketch explain the working principle and components of a simple carburetor.	L2	CO2	6 M
	b)	Classify methods of engine cooling and explain in detail the air cooling method.	L2	CO2	6 M
OR					
5	a)	Classify types of injection systems.	L2	CO2	6 M
	b)	With advantages, limitations explain working principle of magneto ignition system.	L2	CO2	6 M
UNIT-III					
6	a)	Explain how the power can be transmitted in front wheel drive by using a neat diagram.	L2	CO3	6 M
	b)	Explain with a schematic diagram, working of rigid axle front wheel suspension system.	L2	CO3	6 M

OR					
7	a)	What is clutch? Explain the operation of centrifugal clutch.	L2	CO3	6 M
	b)	Explain the features of MacPherson Strut suspension system with a sketch.	L2	CO3	6 M
UNIT-IV					
8	a)	Explain the working of rack and pinion steering mechanism with a neat sketch.	L2	CO3	6 M
	b)	Explain with a suitable schematic diagram, working of hydraulic braking system in a vehicle.	L2	CO3	6 M
OR					
9	a)	What are the functions of steering system? Explain with relevant sketch Ackerman steering mechanism.	L2	CO3	6 M
	b)	Sketch the arrangement of pneumatic braking system used in automobiles and explain.	L2	CO3	6 M
UNIT-V					
10	a)	Explain briefly the methods available to control emissions from an automobile.	L2	CO4	6 M
	b)	Using single diagrams discuss the construction and working of the Horn and Head lights.	L2	CO3	6 M
OR					

11	a)	What are catalytic convertors? Explain how they help in controlling emissions from an automobile.	L2	CO4	6 M
	b)	Explain with a simple sketch, working of Bendix mechanism in a automobile.	L2	CO3	6 M