

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Fifth Semester**Mechanical Engineering***CME380-Automobile Engineering***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Summarize two difference between chassis and frame.	L2	1	2
2.	Which materials are commonly used for engine cylinder heads?	L1	1	2
3.	What is a common rail direct injection system?	L1	2	2
4.	List the Euro emission norms for automobiles.	L1	2	2
5.	Distinguish between a single plate and multi-plate clutches.	L2	3	2
6.	Contrast the importance of a slip joint in the drive line.	L2	3	2
7.	Define caster angle in steering geometry?	L1	4	2
8.	Name the different types of suspension systems.	L1	4	2
9.	List two emission characteristics of SI engines using natural gas.	L1	5	2
10.	Indicate the difference between an electric vehicle and a hybrid vehicle.	L2	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the various types of automobile vehicle constructions and layouts with neat sketches.	L2	1	16
	Or			
	b i Explain the working principle of Variable Valve Timing (VVT) in modern engines with a neat sketch.	L2	1	10
	ii Discuss the various resistances encountered by an automobile and explain their effects on vehicle performance.	L2	1	6
12.	a Explain the gasoline direct injection system's constructional details and working principle with neat sketch.	L2	2	16
	Or			
	b i Explain different methods for reducing automotive engine emissions with neat sketch.	L2	2	10
	ii Describe the role of turbochargers in improving engine power output and efficiency.	L2	2	6

13.	a	Contrast With the help of neat sketch, explain the construction and working of a sliding mesh gearbox.	L3	3	16
		Or			
	b i	Organize the types of rear axle with neat sketch.	L2	3	10
	ii	Choose the operation of a torque converter with a neat diagram.	L2	3	6
14.	a	With a sketch, elaborate the constructional details and working principle of a rack and pinion steering system.	L2	4	16
		Or			
	b	Explain the construction and working of hydraulic braking system with neat sketch.	L2	4	16
15.	a	Explain the construction of LPG system in petrol engine and describe the salient features of using LPG gas as alternate fuel.	L5	5	16
		Or			
	b	Explain the engine modifications required to use hydrogen as a fuel and its combustion characteristics.	L5	5	16