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Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

Automotive Chassis and Suspension

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Describe the layout of an automobile with reference to power plant with a suitable figure.	10	L3	CO1
	b.	Explain in detail the various types chassis layout with the help of relevant sketches.	10	L3	CO1
OR					
Q.2	a.	With a neat sketch illustrate box section type of frames used in automobile.	10	L4	CO2
	b.	Explain the effect of brake application of frame stress.	10	L3	CO2
Module – 2					
Q.3	a.	With a neat sketch discuss the working of hydraulic steering system.	10	L3	CO4
	b.	Discuss the various types of steering linkages used in steering systems.	10	L3	CO4
OR					
Q.4	a.	Discuss in brief the various loads experienced by front axle.	10	L3	CO4
	b.	With a neat sketch discuss the cross section of a front axle for a truck.	10	L4	CO4
Module – 3					
Q.5	a.	With a case study describe the whirling of propeller shaft.	10	L4	CO1
	b.	Explain the working principle of a differential of an automobile with suitable figure.	10	L3	CO1
OR					
Q.6	a.	Describe the construction of semi floating and fully floating type of rear axle with suitable figure.	10	L3	CO1
	b.	With a neat sketch discuss torque tube drive working.	10	L3	CO1

Module – 4

Q.7	a.	Discuss the construction of hydraulic brake system with suitable sketch.	10	L3	CO5
	b.	Explain the concept of vacuum brakes with suitable figure.	10	L3	CO5

OR

Q.8	a.	Explain the various factors influencing the operation of brakes.	10	L3	CO5
	b.	Describe the classification of brakes.	10	L3	CO5

Module – 5

Q.9	a.	With a neat sketch discuss the construction of torsion bar.	10	L3	CO1
	b.	Explain with neat sketch the telescopic shock absorbers.	10	L3	CO1

OR

Q.10	a.	Differentiate between tube tyres and tubeless tyres.	6	L4	CO1
	b.	Compare between alloy wheels and drum wheels of a car.	6	L4	CO1
	c.	Briefly discuss the designation of a car tyre with a case study.	8	L4	CO1
