

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3161920

Date: 30-05-2025

Subject Name: Automobile Engineering

Time: 10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Draw the vehicle layout of (1) front engine front wheel drive (2) four wheel drive in automobile	03
	(b) Classify automobile vehicles based on any four criteria	04
	(c) Explain different types of vehicle bodies with neat sketch.	07
Q.2	(a) Explain rolling resistance, gradient resistance and wind resistance	03
	(b) Write the various types of loads acting on vehicle body. Explain any one with neat sketch.	04
	(c) Write a short note on vehicle aerodynamics.	07
	OR	
	(c) Explain various resistance to motion of a vehicle in detail.	07
Q.3	(a) Point out need of clutch in automobile	03
	(b) Draw the layout of transmission system	04
	(c) Explain constant mesh gearbox working with neat sketch	07
	OR	
Q.3	(a) Give the function of (1) propeller shaft and (2) universal joint	03
	(b) Compare Hotchkiss drive with torque tube drive	04
	(c) Explain the necessity, construction and operation of the differential	07
Q.4	(a) Define caster, camber, King pin inclination	03
	(b) What are function of steering system? what are the requirement of good steering system?	04
	(c) Explain double wishbone suspension system.	07
	OR	
Q.4	(a) List advantages and disadvantages of telescopic shock absorber	03
	(b) Differentiate disc brake and drum brake	04
	(c) Explain Antilock Braking System in detail.	07
Q.5	(a) What is wheel alignment?	03
	(b) What is wheel balancing? explain requirement of wheel balancing	04
	(c) Draw a simplified wiring circuit for the lighting system of car	07
	OR	
Q.5	(a) Explain recent trends with modern vehicle	03
	(b) List the various electronic components used in automobile system	04
	(c) Describe in detail constructional features of the tube and tubeless tyres for automotive use. Discuss also their relative merits and demerits	07
