

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- IV EXAMINATION – SUMMER 2026

Subject Code:3140203

Date:19-05-2026

Subject Name: Basics of Automobile Systems

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) Classify different types of automobile.	03
(b) Define different resistances during motion.	04
(c) Explain front engine rear drive vehicle layout with neat sketch.	07
Q.2 (a) What are the function and necessity of gear box?	03
(b) Write advantages and limitations of electric vehicle.	04
(c) Explain Sliding mesh gear box with neat sketch.	07
OR	
(c) Explain torque converter with neat sketch.	07
Q.3 (a) What are the function of universal joint?	03
(b) Write a short note on construction of propeller shaft?	04
(c) Explain any two types of constant velocity joint?	07
OR	
Q.3 (a) What is the function of final drive?	03
(b) Classify final drive and explain any one.	04
(c) Explain working operation of differential.	07
Q.4 (a) Classify brakes.	03
(b) Define braking efficiency and stopping distance.	04
(c) Explain bleeding of brake.	07
OR	
Q.4 (a) Classify suspension system.	03
(b) Write a short note on torsion bar.	04
(c) Explain double wishbone suspension system.	07
Q.5 (a) What is the principle of steering system?	03
(b) Classify different types of steering gear box.	04
(c) Explain ackerman steering mechanism.	07
OR	
Q.5 (a) Classify tyres.	03
(b) Write a short note on specification of tyre.	04
(c) Describe effects of tyre pressure on tyre performance.	07
