

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3171720****Date: 30-05-2024****Subject Name: Automotive Instrumentation****Time: 02:30 PM TO 05:00 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) Discuss current trends in automobile industry with increasing role of electronics.	03
	(b) Differentiate between antilock braking system and conventional braking system.	04
	(c) Discuss adaptive cruise control in detail.	07
Q.2	(a) Discuss electronic transmission control.	03
	(b) List out different automotive subsystems.	04
	(c) Discuss AUTOSAR in detail.	07
	OR	
	(c) Discuss traction control system with main features and benefits.	07
Q.3	(a) List out active and passive safety systems for automotive system.	03
	(b) Discuss comfort system for automobile system.	04
	(c) Discuss functionality of generic automotive control ECU with diagrams.	07
	OR	
Q.3	(a) Discuss instrument clusters and dashboard electronics.	03
	(b) Discuss electromagnetic compatibility with reference to hardware design of automobile system.	04
	(c) Compare automotive vehicles with and without adaptive power steering.	07
Q.4	(a) Describe body electronics for automotive system.	03
	(b) Discuss significance of remote keyless entry in automotive systems.	04
	(c) Discuss electronic stability program for automobile system.	07
	OR	
Q.4	(a) List out different sensors used in automobile system.	03
	(b) Discuss assembly process of automotive system in brief.	04
	(c) Justify use of immobilizers for vehicle.	07
Q.5	(a) Discuss active suspension control in brief.	03
	(b) Discuss fuel control module for automotive system.	04
	(c) Justify the use of ABS for safety in automotive system.	07
	OR	
Q.5	(a) Explain principles of designing automobile system.	03
	(b) Justify the use of air bag for automotive system.	04
	(c) Justify need of battery management system for automotive vehicles.	07
