

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2181708****Date:09/05/2019****Subject Name:Automotive Instrumentation****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.

		MARKS
Q.1	(a) Explain generic functioning of ECU.	03
	(b) Explain crank angle and position sensors with reference to engine management system.	04
	(c) Discuss current trends in automobile industry with increasing role of electronics and software.	07
Q.2	(a) Explain electronic transmission control for automotive vehicles.	03
	(b) Explain EGR for exhaust emission control.	04
	(c) Explain different control algorithms used for engine management system for automotive vehicles.	07
	OR	
	(c) Discuss recent trends in suspension systems with reference to automotive vehicles.	07
Q.3	(a) Explain body electronics for automotive vehicles in brief.	03
	(b) Compare automotive vehicle system with and without ABS.	04
	(c) Explain functional safety standards associated with automotive industry in brief.	07
	OR	
Q.3	(a) Explain functioning of air bags for automotive vehicles.	03
	(b) Explain automotive standard CAN protocol.	04
	(c) Discuss principles of designing automobile system.	07
Q.4	(a) Explain adaptive power Steering for automobile system.	03
	(b) Explain automotive standard Lin protocol.	04
	(c) Give overview of typical automotive subsystems and components.	07
	OR	
Q.4	(a) Explain battery management system for automobile system.	03
	(b) Describe fuel control module for automobile system.	04
	(c) Explain assembly process of automotive and instrumentation systems.	07
Q.5	(a) Explain automotive standard MISRA.	03
	(b) Explain comfort system for automobile system.	04
	(c) Discuss EPS for automobile system and stability.	07
	OR	
Q.5	(a) Explain air mass flow sensor for automotive vehicles.	03
	(b) Explain AUTOSAR for automotive vehicles.	04
	(c) Discuss traction control and electronic stability for automobile system.	07
