GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3171720   **Date:06/06/2022**
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)**	Compare automotive vehicles with and without adaptive power steering.	**03**
	(b)	Explain AUTOSAR in detail.	**04**
	(c)	Explain ABS in detail.	**07**
Q.2	**(a)**	Discuss current trends in automobile industry with increasing role of electronics.	**03**
	(b)	What is ECU? Explain basic functionality of it.	**04**
	(c)	Explain electronic stability program for automobile system.	**07**
		OR	
	(c)	What is adaptive cruise control for automobile system?	**07**
Q.3	**(a)**	Explain comfort system for automobile system.	**03**
	(b)	Compare antilock braking system with conventional braking system.	**04**
	(c)	Identify different automotive subsystems and explain any one in brief.	**07**
		OR	
Q.3	**(a)**	Identify active and passive safety systems of automobiles.	**03**
	(b)	Explain traction control for automobile system in brief.	**04**
	(c)	Justify use of immobilizers for vehicle.	**07**
Q.4	**(a)**	Explain body electronics for automotive vehicles in brief.	**03**
	(b)	Explain instrument clusters and dashboard electronics of automobiles.	**04**
	(c)	Explain principles of designing automobile system.	**07**
		OR	
Q.4	**(a)**	Explain remote keyless entry for vehicle.	**03**
	(b)	Explain electromagnetic compatibility with reference to hardware design of automobile system.	**04**
	(c)	Explain air bags for automotive vehicles in brief.	**07**
Q.5	**(a)**	Explain FCM in brief.	**03**
	(b)	Enlist the different sensors used in automobile system.	**04**
	(c)	Why battery management system needed for automotive vehicles? Explain it.	**07**
		OR	
Q.5	**(a)**	Discuss increasing roll of software in automobile system.	**03**
	(b)	Explain the aspects of hardware design for automotive systems.	**04**
	(c)	Explain assembly process of automotive and instrumentation systems.	**07**

****