

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018****Subject Code: 2181708****Date: 30/04/2018****Subject Name: Automotive Instrumentation(Departmental Elective - III)****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 AUTOSAR in brief.	03
	(b) Compare automotive system with and without EGR.	04
	(c) What is ECU? Explain basic functionality of it.	07
Q.2	(a) Explain throttle position sensor for automotive system.	03
	(b) Compare antilock braking system with conventional braking system.	04
	(c) Discuss recent trends in suspension systems with reference to automotive vehicles.	07
<b>OR</b>		
	(c) Explain adaptive power steering with reference to automotive vehicles.	07
Q.3	(a) Explain temperature sensors used in automotive vehicles in brief.	03
	(b) Compare different protocols associated with automotive vehicles.	04
	(c) Explain functional safety standards associated with automotive industry in brief.	07
<b>OR</b>		
Q.3	(a) What is adaptive cruise control for automobile system?	03
	(b) Why battery management system needed for automotive vehicles? Explain it.	04
	(c) Explain different control algorithm used for engine management system for automotive vehicles.	07
Q.4	(a) Explain body electronics for automotive vehicles in brief.	03
	(b) Explain traction control for automobile system in brief.	04
	(c) Explain the roll of instrumentation system in assembling process of automobile system.	07
<b>OR</b>		
Q.4	(a) List out different automotive subsystems and explain any one in brief.	03
	(b) Discuss increasing roll of software in automobile system.	04
	(c) Explain principles of designing automobile system.	07
Q.5	(a) Explain air mass flow sensor for automotive vehicles in brief.	03
	(b) Explain comfort system for automobile system.	04
	(c) Explain electronic stability program for automobile system.	07
<b>OR</b>		
Q.5	(a) Explain air bags for automotive vehicles in brief.	03
	(b) Explain electromagnetic compatibility with reference to hardware design of automobile system.	04
	(c) Explain fuel control module with reference to energy management and emission control in automotive vehicles.	07

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