

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3171720**Date:16-12-2023****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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Discuss increasing role of electronics for automotive industry. **03**
 (b) List out different automotive subsystems and explain any one in brief. **04**
 (c) Describe the key features and components of AUTOSAR in detail. **07**
- Q.2** (a) Discuss increasing roll of software in automobile system. **03**
 (b) Explain comfort system for automobile system. **04**
 (c) Explain and analyze the benefits of adaptive power steering. **07**
- OR**
- (c) Describe traction control system and list its main features and benefits. **07**
- Q.3** (a) Explain body electronics for automotive vehicles. **03**
 (b) Compare the features and functionalities of an antilock braking system and a conventional braking system. **04**
 (c) Describe the benefits and limitations of adaptive cruise control in an automobile system **07**
- OR**
- Q.3** (a) List out safety and comfort systems for automotive system. **03**
 (b) Compare automotive vehicles with and without adaptive power steering. **04**
 (c) Explain electronic stability program for automobile system. **07**
- Q.4** (a) Explain Electronic transmission control in brief. **03**
 (b) Explain an overview of the process of assembling automotive and instrumentation systems. **04**
 (c) Justify active suspension control improve vehicle performance and ride comfort. **07**
- OR**
- Q.4** (a) Explain in brief about function and importance of electronic instrument clusters and dashboard electronics in modern automobiles. **03**
 (b) Explain electro-magnetic interference suppression for automobile system. **04**
 (c) Justify the importance of airbags in an automotive system **07**
- Q.5** (a) List out different sensors used in automobile system. **03**
 (b) Explain significance of remote keyless entry in automotive systems. **04**
 (c) Describe an immobilizer for security of automotive systems. **07**
- OR**
- Q.5** (a) Explain in brief about fuel control module. **03**
 (b) Explain battery management system for automotive vehicles. **04**
 (c) Justify the use of ABS for safety in automotive system. **07**
