

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022****Subject Code:3170208****Date:03/06/2022****Subject Name:Measurement, Instrumentation and Control in Automobile****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) Define the following term: 1) Hysteresis 2) Threshold 3) Drift	03
	(b) Explain Types of Errors in Measurement.	04
	(c) Explain Generalized Measurement System with example.	07
Q.2	(a) Explain Difference Between Precision and Accuracy with Example.	03
	(b) What is Load Cell? Explain any one with neat sketch	04
	(c) Explain Working of Rope Brake Dynamometer for torque measurement	07
	OR	
	(c) Explain principle, Working and Method of speed measurement using stroboscope.	07
Q.3	(a) How Temperature Measuring Instruments are classified?	03
	(b) Explain any one method for Vibration Measurement	04
	(c) Enlist mechanical measuring Instrument used in automobile and explain in brief about any one of them.	07
	OR	
Q.3	(a) Define: 1) Sensitivity 2) Sensor 3) Reliability	03
	(b) Write a note on Data Acquisition Method in Automobile	04
	(c) Explain general-purpose cathode ray Oscilloscope with diagram	07
Q.4	(a) What is Practical Importance of Sensors in Automobile?	03
	(b) Explain Working of Oxygen Sensor in Automobile	04
	(c) What is Function of Solenoid? Explain its working and Application in Automobile.	07
	OR	
Q.4	(a) What is Function of Actuator? State its application in Automobile.	03
	(b) Explain Working of Pressure Sensor in Automobile	04
	(c) Explain Exhaust gas recirculation actuators with Diagram.	07
Q.5	(a) Explain FFT analyser	03
	(b) Write a note on safety systems of Automobile.	04
	(c) Explain Electronic Stability Control System of Automobile.	07
	OR	
Q.5	(a) Enlist difference between static and Dynamic Measurement System	03
	(b) Write a note on Comfort Systems of Automobile	04
	(c) Explain ABS System of Automobile with neat sketch	07
