

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- V (New) EXAMINATION – WINTER 2019****Subject Code: 2151706****Date: 21/11/2019****Subject Name: Industrial Measurement II****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

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| Q.1 | (a) Explain Synchros for Servomechanism Application. | 03 |
| | (b) Derive the expression of Gauge Factor for Strain Measurement. | 04 |
| | (c) Explain LVDT Transducer with Construction, Working, Output Characteristics and Circuit Analysis in detail. | 07 |
| Q.2 | (a) Explain difference between Absolute and Incremental Encoder. | 03 |
| | (b) Explain Magnetostrictive Transducer in detail. | 04 |
| | (c) Explain Various Types of Proximity Sensors in detail. | 07 |
| | OR | |
| | (c) Explain Strain Measurement with Voltage Sensitive Bridge and Current Sensitive Bridge in detail. | 07 |
| Q.3 | (a) Explain Wire Wound type Strain Gauges. | 03 |
| | (b) Explain Resistive Type Acceleration Measurement. | 04 |
| | (c) Explain AC and DC tachogenerators in detail. | 07 |
| | OR | |
| Q.3 | (a) Explain Proving Ring in detail. | 03 |
| | (b) Explain ORP Measurement Method in detail. | 04 |
| | (c) Explain Temperature Effects and Compensation in Strain Measurement in detail. | 07 |
| Q.4 | (a) Explain Strain Gauge type Load Cell for Force measurement in detail. | 03 |
| | (b) Explain Dunmore Cells in detail. | 04 |
| | (c) Explain Mass Spectrometers in detail. | 07 |
| | OR | |
| Q.4 | (a) Explain Conductivity Measurement in brief. | 03 |
| | (b) Explain Torque Tube Displacer Method for Density Measurement. | 04 |
| | (c) Explain Infrared Analyzers in detail. | 07 |
| Q.5 | (a) Explain Saybolt Viscometer in detail. | 03 |
| | (b) Explain Geiger Muller Counter in detail. | 04 |
| | (c) Explain Different types of Reference and Measuring Electrodes for pH Measurement in detail. | 07 |
| | OR | |
| Q.5 | (a) Explain Ultrasonic Displacement Transducer. | 03 |
| | (b) Explain Consistency Measurement in detail. | 04 |
| | (c) Explain Sample Handling Systems in detail. | 07 |
