

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2151706

Date: 03/06/2019

Subject Name: Industrial Measurement II

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.

- Q.1**
- (a) Explain the working principle of Load Cell with sketch. **03**
 - (b) Explain pneumatic transducer for displacement measurement **04**
 - (c) Explain principle, working and construction of dispersive and non dispersive type infrared analyzer **07**
- Q.2**
- (a) Define the following terms. **03**
 - 1) Strain
 - 2) Shear thickening
 - 3) Absorption
 - (b) Explain in detail about paramagnetic Oxygen Analyzer **04**
 - (c) Explain the working principle of Mass Spectrometer. Explain any one type of mass spectrometer in detail. **07**
- OR**
- Q.3**
- (c) Define Viscosity. What are the different methods of Viscosity measurement? Explain any one method with basic Principle, working & suitable application **07**
 - (a) Explain Sample Handling system with sketch **03**
 - (b) Explain Turbidity Measurement in Detail **04**
 - (c) Explain principle, working and construction of Magneto strictive Transducer for displacement measurement **07**
- OR**
- Q.3**
- (a) Explain with sketch about Flapper Nozzle arrangement **03**
 - (b) Explain the need of pH and conductivity and density measurement for industrial application in detail **04**
 - (c) Differentiate Thermal, Capacitive and Piezo- resistive, accelerometers **07**
- Q.4**
- (a) Explain humidity measurement technique with necessary diagram. **03**
 - (b) Explain the Tachometer for speed measurement with necessary diagram **04**
 - (c) Explain the detail of industrial weighing system **07**
- OR**
- Q.4**
- (a) Explain the Beer Lamberts low with necessary equation. **03**
 - (b) What is chromatography? Draw block diagram of Gas Chromatography **04**
 - (c) Explain in detail UV Visible Spectroscopy **07**
- Q.5**
- (a) Explain in detail Proximity sensor with necessary diagram **03**
 - (b) Explain in detail about LVDT with necessary diagram and its application **04**
 - (c) Explain working principle of Stain Gauge with necessary diagram. List out types and its application. **07**

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| Q.5 | (a) | Explain working principle of Flame Photometer | 03 |
| | (b) | Write a short note on Hydrometers | 04 |
| | (c) | Define the Opacity and describe in detail Opacity measurement | 07 |

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