

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (OLD) EXAMINATION – WINTER 2018****Subject Code:151702****Date: 16/11/2018****Subject Name: Sensors And Signal Conditioning****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.

- Q.1** (a) Enumerate the various test signals, its waveform and mathematical representation. **07**
 (b) Defines terms **07**
 1) Fidelity 2) Span 3) Laplace transform
 4) Bandwidth 5) Gross error 6) PCM 7) Reproducibility
- Q.2** (a) Explain in detail- Photo emissive transducers **07**
 (b) Explain in detail- Foster Seely Detector **07**
OR
 (b) Explain the operation of electromagnetic flow meter **07**
- Q.3** (a) Explain in detail capacitive level transducer **07**
 (b) Explain – DC power supplies **07**
OR
- Q.3** (a) Define Calibration and explain the Process of Calibration **07**
 (b) Explain operational amplifier in short. **07**
- Q.4** (a) Explain Schmitt trigger in detail **07**
 (b) Explain hall effect transducer in detail. **07**
OR
- Q.4** (a) Draw functional block diagram of Measurement System and describe each Component in detail. **07**
 (b) Explain the operations of ‘multiplexing’ and ‘demultiplexing’ and indicate their application in instrumentation. **07**
- Q.5** (a) Explain: **07**
 (1) Peltier Effect
 (2) Thompson effect
 (3) See beck effect
 (4) Law of intermediate metals
 (5) Law of intermediate temperature
 (b) What is pH? Explain different types of pH electrodes in detail. **07**
OR
- Q.5** (a) Give the difference between periodic and aperiodic signals **07**
 (b) Give the detailed classification of transducers **07**
