

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 151702****Date: 19-06-2014****Subject Name: Sensors and Signal Conditioning****Time: 10.30 am - 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.

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| Q.1 | (a) | Explain piezoelectric transducer in detail. | 07 |
| | (b) | Explain eddy current type inductive transducer in detail. | 07 |
| Q.2 | (a) | Explain capacitive moisture transducer in detail. | 07 |
| | (b) | Explain digital tachometer in detail. | 07 |
| OR | | | |
| | (b) | Explain reference electrode for PH measurement with neat sketch. | 07 |
| Q.3 | (a) | Give the detailed classification of transducers. | 07 |
| | (b) | Give the difference between periodic and aperiodic signals | 07 |
| OR | | | |
| Q.3 | (a) | Give the classification of signals in short. | 07 |
| | (b) | Explain the measurement of phase angle with neat sketch. | 07 |
| Q.4 | (a) | Explain operational amplifier in short. | 07 |
| | (b) | Explain resistive moisture transducer in detail. | 07 |
| OR | | | |
| Q.4 | (a) | Explain crystal oscillator with neat sketch. | 07 |
| | (b) | Explain Op-amp based V to F converter with neat sketch. | 07 |
| Q.5 | (a) | Explain data loggers in detail. | 07 |
| | (b) | Explain Schmitt trigger in detail. | 07 |
| OR | | | |
| Q.5 | (a) | Explain photoconductive transducer in detail. | 07 |
| | (b) | Explain hall effect transducer in detail. | 07 |
