Code: R7320204

R07

B.Tech III Year II Semester (R07) Supplementary Examinations December/January 2015/2016

INSTRUMENTATION

(Electrical and Electronics Engineering)

(For 2008 regular admitted batch only)

Time: 3 hours Max Marks: 80

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is measurement? Explain the block diagram of electronic measurement system.
(b) Differentiate between the terms 'Scale range' and 'Scale span' giving suitable examples.

2 (a) Explain the process of Quantization with relevant waveforms.
(b) Discuss about different techniques under pulse modulation in detail.

3 (a) What is secondary emission of electrons? Explain its significance in Storage Oscilloscopes.
(b) Discuss in detail about variable persistence storage.

4 (a) State the advantages of DVM over analog voltmeters.
(b) Explain the operating principle of Ramp type DVM with diagram.

5 (a) Explain the working of a frequency selective wave analyzer with a neat block diagram.
(b) What is harmonic distortion? What are the types of the distortion? Discuss them.

6 Explain the following with diagrams:
(a) Piezo electric transducer.
(b) Photo voltaic type transducer.
(c) Capacitive transducer.

7 (a) Explain about: (i) Column type load cell. (ii) Proving ring –type load cell.
(b) The output of an LVDT is connected to a 5 V voltmeter through an amplifier with a gain of 250. The voltmeter scale has 100 divisions and the scale can be read up to 1/5 of a division. An output of 2 mV appears across the terminals of the LVDT, when core is displaced through a distance of 0.5 mm. Calculate and determine: (i) Sensitivity and entire set-up. (ii) The resolution of the instrument.

8 (a) Explain the principle of hotwire anemometer for the flow measurement.
(b) Explain the operation of ultrasonic flow meter.

*****