Code: 13A02801 **R13**

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

INSTRUMENTATION

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) List out the static characteristics in a measurement system.
(b) Mention the statistical methods used in analysis of random errors.
(c) Draw the block diagram of DAS.
(d) Write any two applications of frequency modulation.
(e) Define Q of a coil.
(f) Draw the block diagram of heterodyne wave analyzer.
(g) Define gauge factor.
(h) Classify the transducers.
(i) Mention the sensors used for measurement of temperature.
(j) Define gauge sensitivity.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Derive an expression to obtain the output equation of the second order system for under damped system when the step input is applied.

OR

3 (a) Discuss about the errors in measurement system.
(b) List out the standard test signals and represent them in terms of time domain and frequency domain.

UNIT – II

4 Describe the principle and working of pulse code modulation (PCM) with neat wave forms.

OR

5 Draw the block diagram of frequency division multiplexing and explain each block in it.

UNIT – III

6 Draw the block diagram of vector impedance meter and explain each block in it.

OR

7 (a) Write the principle and working of spectrum analyzer.
(b) Write the applications of wave analyzers.

UNIT – IV

8 Explain the principle and working of LVDT transducer.

OR

9 Explain the principle and working of piezoelectric transducers.

UNIT – V

10 Describe the working of seismic sensor for measurement of angular velocity.

OR

11 (a) Write short notes on pressure sensors.
(b) Write the principle and working of thermocouples.

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