

Code No: **R41026****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, October/November- 2017****INSTRUMENTATION****(Common to EEE, ME & ECE)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) Distinguish between systematic and random errors in a measurement and how they are usually minimized. [8]  
b) Explain about the static characteristics of an instrument. [7]
- 2 a) Explain the following processes as applied to pulse code modulation.  
(i) Quantization process (ii) Encoding process. [8]  
b) Describe the procedure used to determine whether the sum of two periodic signals is periodic or not. [7]
- 3 a) What is meant by transducer? Explain the characteristics and choice of transducers. [8]  
b) Describe the principle of operation of strain gauge. [7]
- 4 a) Explain dual slope integration method type digital voltmeter with a neat block diagram. [8]  
b) Explain the working of digital phase angle meter with a neat sketch. [7]
- 5 a) Explain the working of a sampling oscilloscope with the help of its diagram. What precautions should be taken when using the sampling oscilloscope? [9]  
b) Explain in brief (i) Digital type data logger (ii) Transient recorder. [6]
- 6 a) Draw the block diagram of the frequency selective wave analyzer. How is a complex wave analyzed with this analyzer? [8]  
b) What do you understand by total Harmonic distortion? Enumerate the application of Wave analyzers [7]
- 7 a) Explain the measurement of angular velocity using D.C tachometers with neat sketch. [8]  
b) Describe the construction and working of LVDT accelerometer with a neat sketch. [7]
- 8 a) Explain the principle of operation of electromagnetic flow meter. Describe how flow is measured with a neat sketch. [8]  
b) Describe the method of measurement of pressure using capacitive transducer. [7]