

Code No: **R41026**

R10

Set No. 1

IV B.Tech I Semester Supplementary Examinations, March - 2017

INSTRUMENTATION

(Open Elective)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions

All Questions carry equal marks

- 1 a) Define the following static characteristics of measuring instruments.
i) Accuracy ii) Precision iii) Sensitivity iv) Static error [8]
b) Explain gross errors in measurement system. How gross errors can be minimized? [7]
- 2 a) Explain amplitude modulation technique with necessary equations. [8]
b) Distinguish between periodic and aperiodic signals. [7]
- 3 a) What are the parameters to be considered in selecting a transducer? [7]
b) Describe the working principle of LVDT with a neat diagram. [8]
- 4 a) With a neat block diagram explain successive approximation type digital voltmeter. [8]
b) Discuss the advantages of digital voltmeters over analog voltmeters. [7]
- 5 a) Draw the block diagram of a CRO and explain its operation. [8]
b) Prove that, in dual slope integration type DVM the measurement accuracy is independent of resistor and capacitor tolerances. [7]
- 6 a) Explain with the help of block diagram the operation of spectrum analyzer. [8]
b) Briefly explain about harmonic distortion and total harmonic distortion. [7]
- 7 a) Explain the principle and operation of photoelectric tachometer. [8]
b) With the help of neat sketches, explain the principle of piezoelectric force transducers. [7]
- 8 Write short notes on the following.
a) Optical pyrometer. [8]
b) Hotwire anemometer. [7]