

Code No: **R31044****R10****Set No. 1****III B.Tech I Semester Supplementary Examinations, October/November - 2017****ELECTRONIC MEASUREMENTS AND INSTRUMENTATION**

(Common to Electronics and Computer Engineering & Electronics and Instrumentation Engineering)

Time: 3 hours**Max. Marks: 75****Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Briefly define and explain all the static characteristics of measuring instruments. [7M]
b) How do random errors differ from systematic errors? [4M]
c) Explain how multimeter used for measurement of voltage and resistance. [4M]
- 2 a) Draw the block diagram of a function generator and explain the method of producing sine waves? [9M]
b) Explain the working of random noise generator with neat diagram? [6M]
- 3 a) Explain the working of a heterodyne type wave analyzer with neat sketch? [9M]
b) Define harmonic distortion and give a method for its determination. [6M]
- 4 a) With the help of a circuit diagram explain the working of a triggered sweep generator? [10M]
b) What is the specialty of a dual beam CRO? [5M]
- 5 a) Draw the block diagram of storage oscilloscope and explain the working of each block. [10M]
b) Differentiate between the active probe and passive probe? [5M]
- 6 a) Derive the general equations for balance of an a.c. bridge. Prove that "For balance in an a.c. bridge, both magnitude and phase have to be satisfied unlike a d.c. bridge where in only the magnitude condition is to be satisfied". [8M]
b) The four arms of a wheat stone bridge have the following resistances : AB=100 Ω , BC=10 Ω , CD=4 Ω , DA=50 Ω A galvanometer of 20 ohms resistance is connected across BD. Calculate the current through the galvanometer when a potential difference of 10 volts is maintained across AC. [7M]
- 7 a) Discuss about the working of LVDT with neat sketch? [8M]
b) A resistance strain gauge with a gauge factor 2.04 is fastened to a beam which is subjected to a strain of 1×10^{-6} . If the original resistance of the gauge is 120 Ω Calculate the change in resistance? [7M]
- 8 a) Discuss the transducer used to measure velocity and explain the procedure of measurement. [7M]
b) What are the four types of electrical pressure transducer and explain any one? [8M]

