H.T.No. | | | | | | | | | | |

Code No: EC1545 **GEC-R14**

IV B. Tech I Semester Regular Examinations, November 2017

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 Hours **Max. Marks: 60**

Note: All Questions from **PART-A** are to be answered at one place.
Answer any **FOUR** questions from **PART-B.** All Questions carry equal Marks.

PART-A

6 × 2 = 12M

1. List any four sources of error except the error associated with Hardware.
2. a) Calculate the resolution of a 4-1/2 digit voltmeter.
   b) State the advantages of digital volt meter over analog meter.
3. a) The Wein bridge is suitable for _____ range of frequencies.
   b) What is the significance of random noise generator?
4. a) What is the purpose of Schering bridge?
   b) What is the principle of harmonic distortion analyzer?
5. What is the need for attenuator in vertical input system of a CRO?
6. What are the limitations of Piezo electric transducers?

PART-B

4 × 12 = 48M

1. a) Draw a shunt type Ohmmeter and explain the calibration procedure in detail. (8M)
   b) The expected value of the voltmeter across a resistor is 100V. However, the measurement gives a value of 99V. Calculate (4M)
   i) Absolute error ii) % error iii) Relative accuracy iv) % accuracy.
2. a) Draw block diagram of Integrating type DVM and explain its operation. (6M)
   b) An integrator contains a 100KΩ and 1μF capacitor. If the voltage applied to the integrator input is 1V, what voltage will be present at the output of the integrator after 1 sec? (6M)
3. a) What is random noise generator? Explain with neat block diagram. (6M)
   b) Describe with neat diagram, the operation of AF sine and square wave generator. (6M)
4. a) Explain the principle and working of Heterodyne Harmonic Distortion Analyzer. (8M)
   b) What is harmonic distortion? (4M)
5. a) Draw and explain the block diagram of digital storage oscilloscope. (7M)
   b) Write a short note on distributed parameter delay line. (5M)
6. a) Describe the construction and working of an LVDT. (6M)
   b) Explain the bonded and unbonded strain gauges. (6M)

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