SCHOOL OF ENGINEERING AND TECHNOLOGY

D.C. COURT JUNCTION, DIMAPUR

End term EXAMINATION, June 2017

Course Code:	EC4T05	**Semester:**	IV	**Total Marks**	60
Course Name:	Electronic measurement and instrumentation			**Time:**	3hrs

Part A

I. Choose the correct answer: **5X1=5**

1. Threshold with respect to measuring instrument is
   a. The maximum signal that can be measured.
   b. The value of sensitivity on the highest scale
   c. The value of sensitivity on the lowest scale
   d. The smallest signal which results in a detectable output.
2. Desirable static characteristics of a measuring system are
   a. Accuracy and reproductively.
   b. Accuracy, sensitivity and reproductively.
   c. Low static error
   d. Low drift/dead zone
3. The following is a measure of reproductively in a measurement system.
   a. Efficiency
   b. Fidelity
   c. Precision
   d. Drift
4. PMMC instrument can be used for measurement of
   a. High frequency
   b. Both ac and dc
   c. Low frequency
   d. only dc
5. A moving PMMC instrument has
   a. Uniform scale
   b. Non linear scale
   c. Its deflection is proportional to current

d. Its deflection is proportional to current

I. Fill up the blanks **5X1=5**

1. In CRO clouds of electrons are absorbed by a material called as _____
2. The input output characteristic of a variable capacitor transducer has _____ characteristics.
3. An example of absolute instrument is _____
4. $4^{3}/_{4}$ digit display will have maximum count of _____
5. LED works on the principle of _____

Part B

1. Write short notes on (Any TWO) **2X4=8**

a. LVDT
b. Average responding voltmeter
c. AC and DC probes

2. Answer any FOUR **4X3=12**

a. What is the function of delay line in CRO
b. Derive the balance condition of AC bridge
c. What is the operating principle of LCD display? Write the advantage of LCD over LED.
d. List various types of Pressure transducer
e. A capacitive transducer consist of two circular plates of diameter 3cm separated by an air gap of 1mm. Calculate the displacement sensitivity of the transducer for small axial displacement.

Part C

1. What are instruments? Explain the different types of instrument. **8**
2. Draw the circuit topology of Scherings Bridge and explain its operation. **8**
3. What are harmonic detectors? With the help of a block diagram explain the working of a spectrum analyzer.

OR 7

Explain the working and construction of an RC phase shift oscillator.

4. Explain the essential components of CRT in a CRO.

OR **7**

Explain R-2R DAC? Write the performance characteristics of DAC.