3rd Sem. E&TC 2021(W)

Th-4 ELECTRONICS MEASUREMENT & INSTRUMENTATION

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. What is Lissajous pattern?

   b. Define the accuracy and sensitivity.

   c. Write down the application of digital tachometer.

   d. State the difference between transducer and sensor.

   e. Define the static and dynamic characteristics.

   f. State the advantages and disadvantages of MI instruments.

   g. What is DSO?

   h. Define Q factor.

   i. Draw the diagram of De-Sauty bridge.

   j. What is signal generator and classify it?

2. Answer **Any Six** Questions 6 x 5

   a. What is errors of an instrument and explain various types of errors?

   b. Explain the basic principle of operation of AC voltmeter with its application.

   c. A 1mA meter movement with an internal resistance of 100Ω is to be converted into a 0-100mA. Calculate the value of shunt resistance required with proper circuit diagram.

   d. Which bridge is used for measurement of unknown inductance? Explain the working of that bridge.

   e. Define transducer and explain the working of load cell.

   f. Draw the diagram of ramp type digital voltmeter and explain its operation.

   g Explain the working of wave analyser.

3 Describe the construction and operation of PMMC instruments with its advantages and disadvantages. 10

4 With neat diagram explain the construction and working of LVDT. 10

5 Draw the block diagram of CRO and describe the function of each block and write down the application of CRO. 10

6 Describe the bridge used to measure the unknown resistance and write its applications. 10

7 Write the short note on: 10
   1) Thermistor
   2) Analog multimeter