

ELECTRONICS MEASUREMENT AND INSTRUMENTATION

(Code : ETT-303)

Full Marks : 80

Time : 3 hours

Answer any five questions including Q. Nos. 1 & 2

Figures in the right-hand margin indicate marks

1. Answer *all* the questions : 2 × 10
 - (a) What is linearity and accuracy ?
 - (b) What do you mean by thermocouple ?
 - (c) Define pyrometry.
 - (d) What is the use of tachometer ?
 - (e) Define sensor.
 - (f) Write the applications of DSO.
 - (g) Differentiate between the AC and DC Bridge.
 - (h) Define error.
 - (i) What is the difference between analog and digital multimeter ?
 - (j) Define LVDT.

2. Answer any *six* questions : 5 × 6
 - (a) Explain the operation of analog voltmeter.
 - (b) Explain working principle of DSO with suitable diagram.
 - (c) Define transducer. Explain operation of thermocouple in detail.
 - (d) Draw the block diagram of function generator and also write down its applications.
 - (e) Explain the working principle of PMMC and derive the torque equation.
 - (f) Explain the working principle of AF sine and square wave generation.
 - (g) What are different static characteristics of instruments ?

3. What is the use of Wein's bridge ? Draw and derive the expression with suitable diagram. 10

4. Explain the principle of capacitive transducer with charge in plate area and give its advantages and disadvantages. 10

5. Explain digital frequency meter with suitable diagram. 10

6. Explain MI instruments with suitable diagram and also explain its advantages, disadvantages and applications. 10

7. Draw and explain Maxwell's bridge. Derive equation for bridge balanced equation for unknown parameter and state its applications. 10