UG/5th Sem/ELEC(H)/Pr/19

2019

B.Sc. (Honours)

5th Semester Examination

ELECTRONICS

Paper - C11-P

Electronics Instrumentation Lab

(Practical)

Full Marks : 20 Time : 3 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer any *one* question selecting by lucky draw.

1. Design a multirange ammeter by using a galvanometer.

2. Design a multirange voltmeter by using a galvanometer.

3. Measure the value of an unknown resistance using Wheatstone bridge network. (Unknown resistance to be supplied during examination)

[Turn Over]

4. Measure the value of an unknown capacitor using De Sauty Bridge. (Unknown capacitor to be supplied during examination)

5. Measure the value of an unknown resistance (low value) using Kelvin Double Bridge. (Unknown resistance to be supplied during examination).

6. Design an integrator circuit using IC741 and show that the circuit is capable of integrating function.

7. Design a differential circuit using IC741 and show that the circuit can perform differentiation.

8. Convert a ..... -mA Galvanometer into 10 V, 5 V and 1 V voltmeters. Record data of input DC Voltage, Galvanometer Reading and calculate the reading to be on Voltmeter Scale. Internal resistance of the Galvanometer is to be supplied.

   Theory - 3, Calculation of resistance - 3, Record of data - 6, Calculation of voltmeter scale - 2, Precaution and discussion - 1.

9. Design Instrumentation amplifier with gain ..... (supplied by examiner) using OPAMP. Plot input voltage difference vs. output voltage.

   Theory - 5, Circuit construction - 5, Record of data - 3, Graph - 2.

10. Measure a displacement by LVDT setup. Record and plot core position vs. output voltage.

    Theory - 5, Record of data - 6, Graph - 2, Precaution and discussion - 2.

11. Measure the temperature of a given sample by thermistor. Record the data (at least 6 no.) of actual temperature by thermometer vs. measured temperature by thermistor. Plot actual temperature vs. error (temperature difference).

    Theory - 4, Record of data - 6, Plot - 3, Precaution and discussion - 2.

Distribution of Marks

Experiment	:	15 marks
Laboratory Note Book	:	02 marks
Viva - voce	:	03 marks
Total	:	20 marks