Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Automation and Robotics) (Sem.–6)

ELECTRONIC MEASUREMENT AND INSTRUMENTATION

Subject Code : BTAR603-18

M.Code : 79278

Date of Examination : 07-07-22

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a) Define sensitivity and hysteresis.

b) Differentiate between threshold and resolution.

c) List the advantages and disadvantages of Anderson bridge.

d) Compare the frequency selective and heterodyne wave analyzers.

e) What is the need of spectrum analysis? Discuss.

f) What do you mean by calibration? Explain.

g) What are the general equations for balance for an AC bridge? Explain.

h) Discuss the necessity of electronic indicating instruments.

i) Explain the principle of photoelectric transducer.

j) Discuss the need of telemetry system.

SECTION-B

2. Define Error. Classify and explain the various types errors that exist in a measurement system.

3. Draw the block diagram of a general purpose CRO and explain the functions of the following controls (a) intensity (b) focus (c) horizontal arid vertical positioning (d) synchronization.

4. Explain the functioning of a basic type of strip chart recorder. Explain the different types of marking mechanisms used in it.

5. Explain the construction and principle of working of a linear variable differential transformer (L.V.D.T). Explain how the magnitude and direction of the displacement of core of an L.V.D.T detected?

6. What are the different types of telemetry systems? Explain the land-line telemetering system and describe its advantages.

SECTION-C

7. What are different problems associated with measurement of low resistances. Explain the principle of working a Kelvin Double Bridge and explain how it overcomes the different problems associated with measurement of low resistances?

8. a) Describe the construction, principle of working and applications of thermocouple.

   b) Explain the principle, construction and working Nixie tube.

9. Discuss the following :

   a) Successive approximation type DVM

   b) Harmonic distortion analyzer.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.