23/12/22

ECE 3rd.

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt _five_ questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

a) What is precision? Can we say an instrument of high precision is accurate?

b) What is creeping and how it is prevented?

c) What is the difference between dual beam and dual trace CRO?

d) What do you mean by the term polymorphism in Lab View?

e) Differentiate between active and passive transducers with an example. (5x2)

UNIT - I

II. a) What are the parameters on which the critical damping of the galvanometer depends? Why critical damping is important?

b) Draw and explain the circuit diagram of Anderson Bridge. Write its advantages, disadvantages and applications. (2x5)

III. a) Derive the torque equation of the moving iron instrument. Illustrate its applications.

b) Elaborate static and dynamic characteristics of measurement systems. (2x5)

IV. a) Distinguish between logic analyzer and spectrum analyzer.

b) Explain the importance of Lissajous figures in the detection of phase and frequency. (2x5)

UNIT - II

V. a) Draw and explain LVDT, List its applications.

b) With a suitable diagram explain an instrumentation amplifier and deduce the expression for the amplification factor. (2x5)

P.T.O.

VI. a) What are the various data types used in VI? Create a VI to find whether the given number is even or odd.

b) Explain the function of shift registers, auto-indexing and feedback nodes. (2x5)

VII. a) List the objects of the Block diagram and Front panel with their functions in Lab View.

b) Draw and explain the Piezo-electric transducer and also derive an expression for the coupling coefficient. (2x5)

x-x-x