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SUBJECT CODE NO:-B-2171
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. T.Y. (Sem-VI)
Examination November/December- 2022
Electronics Paper- XIX (601)
(Instrumentation)

[Time: 1:30 Hours]

[Max. Marks:50]

N.B “Please check whether you have got the right question paper”

1) Attempt all questions.

Q.1 Describe the static characteristics of an instrument. Explain percentage error and accuracy in measurement. 20

OR

Draw labeled diagram of X-Y recorder and explain its working. Write five application of X-Y recorder. Explain five features of digital X-Y plotter.

Q.2 Explain the principle of inductive transducer. Describe the working of Variable reluctance type transducer with neat diagrams. 20

OR

Write short notes on any four of the following.

- a) LED displays
- b) Photo multiplier tube
- c) Dynamic characteristics of measuring instruments.
- d) Frequency modulation recorder
- e) Resistance thermometer.
- f) Load Cell

Q.3 Attempt the following, selecting correct option from the given alternatives. 10

1. In an electrical transducer the relationship between physical parameter and the resulting electrical signal must be -----
 a) Sensitive b) accurate c) linear d) none of the above.
2. In thermistor, resistance decreases as temperature.
 a) Decreases b) increases c) both of above d) none of the above.
3. The smallest change in a measurement Variable to which instrument will response is
 a) Error b) sensitive c) resolution d) all of the above.
4. In photo conductive Cell the material is
 a) Cadmium sulphide b) lithium sulphate c) barium trinitrate d) quartz
5. The piezoelectric transducer uses -----as sensing element
 a) Quartz crystal b) Resistance c) capacitance d) thermocouples

6. The Ga As material is doped to produce -----colour LED.
a) Yellow b) green c) red d) blue
7. The Load cell is -----type of transducer.
a) temperature b) displacement c) pressure d) photo-electric
8. The photo-transistor conducts when light falls on-----
a) Emitter b) collector c) P-N junctions d) none of the above
9. 9) In analogue X-Y recorder, the writing head
a) Moves in X-direction b) moves in Y-direction
c) moves in X and Y direction d) remains fix.
10. Error that occurs due to equally affected measurement is called -----error.
a) Random b) systematic c) frequent d) precision