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Reg. No. : .....

Name : .....

Sixth Semester B.Tech. Degree Examination, May 2016
(2008 Scheme)
08.666 Elective – II : ELECTRONIC INSTRUMENTATION (T)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Explain with examples the difference between accuracy and precision of measurements.
2. Differentiate between ALT mode and CHOP mode operation of CRO.
3. Find the bandwidth in hertz required of an oscilloscope vertical amplifier if the rise time of the input pulse is 26 ns.
4. Explain the term graticule of an oscilloscope.
5. What are the important characteristics of the elastic member ?
6. The output of an LVDT is 2 V for a displacement of ± 5 mm. Determine the output voltage for a core displacement of 2 mm from the center.
7. A strain gauge is made with a wire of 0.5 m long. It has an initial resistance of 100 Ω . The length of the wire gets elongated by 0.2 mm on application of a force. The corresponding resistance change is 0.2 ohms. Compute the gauge factor.
8. Define the sensitivity of the capacitive transducer.
9. What is a selsyns ? Explain.
10. Define and explain the term piezo resistivity. **(10×4 = 40 Marks)**

P.T.O.

PART – B

Answer **any two** questions from **each** Module. **Each** question carries **10** marks.

Module – I

11. Draw the schematic diagram of LVDT and explain its electromechanical transfer characteristics.

12. Enumerate the various sources of errors encountered in a measurement system and explain.

13. A linear resistance potentiometer 60 mm long and is uniformly wound with a wire having a resistance of 12 KΩ . Under normal condition, the slide is at the center of the potentiometer. Find the linear displacement when the resistance of the potentiometer as measured by a Wheatstone's bridge for two case is 3.58 KΩ.

Module – II

14. Briefly discuss about the construction and other aspects of commonly used force summing devices used for pressure sensing.

15. Explain the construction of telemetry system of torque measurement technique.

16. Show how a differential pressure measuring arrangement comprising a suitable force - summing device and an inductive secondary transducer can produce a linear response.

Module– III

17. Analyse the Wheatstone's bridge and obtain the expression for balancing condition of the bridge.

18. Draw a basic circuit for RF power meter and explain.

19. Draw the schematic diagram of a SEM and explain its working. **(6×10 = 60 Marks)**
