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Reg. No. :

Name :

Sixth Semester B.Tech. Degree Examination, April 2014
(2008 Scheme)
08.666 (ELII) ELECTRONIC INSTRUMENTATION (T)

Time : 3 Hours

Max. Marks : 100

PART – A

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



1. Explain the terms sensitivity and resolution.
2. A resistance strain gage with a gage factor of 2 is fastened to a steel member subjected to a stress of 1050 kg/cm^2 . The modulus of elasticity of steel is approximately $2.1 \times 10^6 \text{ kg/cm}^2$. Calculate the change in resistance ΔR of the strain gage element due to the applied stress.
3. Explain the principle of operation of eddy current transducers.
4. Explain the working of a capacitor microphone.
5. Explain the working of semiconductor strain gages.
6. Explain the principle of torque measurement.
7. Explain the functioning of wheatstone bridge.
8. What is the principle of operation of true RMS meters ?
9. Write a note on oscilloscope probes.
10. What is the principle of operation of SEM instruments ?

(10×4=40 Marks)



PART – B

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

Module – I

11. Describe the construction and usage of a typical resistance transducer.
12. Explain the construction and application of a resolver.
13. Explain the construction and usage of a LVDT.

Module – II

14. Explain the measurement of force and pressure using load cells.
15. Explain the working of velocity and acceleration pick-ups.
16. Explain the measurement of speed and torque.

Module – III

17. Explain the operation of Kelvins bridge.
18. Explain with the help of a block diagram, the operation of an audio power meter.
19. Explain the operation of a digital storage oscilloscope. **(6×10=60 Marks)**