Code No.: 9A04604/R09

Set-3

Solutions

B.Tech. III Year II Sem. Regular and Supplementary Examinations

April/May - 2013

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 Hours Max. Marks: 70

*Answer any **FIVE** Questions*

***All** Questions carry **equal** marks*

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1. (a) Explain the construction of a multi range voltmeter.

   (b) A moving coil instrument gives a full scale deflection of 10 mA when the potential difference across its terminals is 100 mV. Calculate,

   (i) The series resistance for a full scale deflection corresponding to 100 A

   (ii) The series resistance for full scale reading with 100 V. Calculate the power dissipation in each case.

2. (a) Explain the operating principle of a function generator.

   (b) Explain the method of producing sine waves in a function generator.

3. (a) Describe the causes of harmonic distortions.

   (b) Explain the basic principles of a digital Fourier analyzer.

4. (a) What are the advantages of negative supply in a CRO?

   (b) Compare the dual beam CRO and dual trace CRO.

5. (a) How does the sampling oscilloscope increase the apparent frequency response of an oscilloscope?

   (b) What is the relationship between the period of a waveform and its frequency? How is an oscilloscope used to determine frequency?

6. (a) What are the applications of Wheatstone bridge? And list out its limitations.

   (b) What are the limitations of Wheatstone bridge?

7. (a) List three types of temperature transducers and describe the applications of each.

   (b) Derive an expression for poissons ratio.

8. What is USB controller? Discuss the architecture of USB controller.