

**Code: 9A04405**

B.Tech II Year II Semester (R09) Supplementary Examinations December/January 2015/2016

**ELECTRONIC MEASUREMENTS**

(Common to EIE &amp; E.Con.E)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Define limiting error and probable error. Explain with an example.  
(b) Explain different methods of measurement.
- 2 (a) What is meant by primary standards? List some primary standards.  
(b) Is voltage standards are under category of primary standard or secondary standard? Justify.
- 3 (a) Define calibration. Why it is required in a measurement?  
(b) What are the factors effecting the calibration? How to eliminate those effects on the calibration for getting effective output?
- 4 List different types of digital voltmeters. Explain about successive approximation type digital voltmeter.
- 5 (a) How can you measure the dielectric strength of a capacitor using a bridge circuit? Derive the related expressions.  
(b) An AC bridge with terminals A,B,C,D(consecutively marked) has in arm AB, a resistance of  $800\ \Omega$  in parallel with a capacitor of  $0.5\ \mu\text{F}$ , arm BC a resistance of  $400\ \Omega$  in series with a capacitor of  $1.0\ \mu\text{F}$ , arm CD a resistance  $1000\ \Omega$ , and arm DA, a pure resistance of  $R$  ohms.  
(i) Obtain the value of frequency for which this bridge can be balanced.  
(ii) Calculate the value of  $R$  required to produce balance.
- 6 (a) Explain the principle of operation of wave meter also list its applications.  
(b) Explain principle of average time period with a neat diagram.
- 7 Write a short note on:  
(a) Lissajous patterns.  
(b) Delay line in CRO.
- 8 (a) Explain different types of display devices.  
(b) Explain the operating principle of spectrum analyzer.

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