

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0323

Roll No.

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**B. Tech.**

(SEM. IV) THEORY EXAMINATION 2010-11  
**ELECTRONICS INSTRUMENTATION AND  
MEASUREMENTS**

*Time : 3 Hours*

*Total Marks : 100*

**Note :** Attempt **all** questions. All questions carry equal marks.

1. Attempt any **four** parts of the following : **(5×4=20)**
  - (a) Explain the terms accuracy, sensitivity and resolution as used for indicating instruments.
  - (b) Explain different types of errors that may occur in measurements.
  - (c) Describe the principle of operation and application of PMMC instruments.
  - (d) Describe the principle of operation and use of Galvanometer.
  - (e) An ammeter reads 6.7 A and the true value of current is 6.5 A. Determine the error and the correction for this instrument.
  - (f) What is meant by arithmetic mean, average deviation and standard deviation ?

2. Attempt any **four** parts of the following :

(5×4=20)

- (a) Describe the working of binary weighted resistance D/A converter.
- (b) Explain the difference between  $3\frac{1}{2}$  digit and 4 digit displays.
- (c) Explain the working of integrating type DVM.
- (d) Describe the principle of operation of Electronic Multimeters.
- (e) Explain the principle of operation of electronic voltmeter.
- (f) Explain how an electronic analog voltmeter can be used to measure alternating current.

3. Attempt any **two** parts of the following :

(10×2=20)

- (a) Define the Q-factor of a coil. Explain with a circuit diagram the construction and principle of operation of a basic Q-meter ?
- (b) State various methods of measurement of low resistance. Why ammeter-voltmeter methods not suitable for the precise measurement of low resistance ?
- (c) Describe the operation of Kelvin double bridge and Schering bridge.

4. Attempt any **two** parts of the following :

(10×2=20)

- (a) Explain with neat sketches, the working principle of CRO.
- (b) Draw the block diagram of D.S.O.P. and explain the function of each block.
- (c) Describe CRO Probe and Sampling Oscilloscope.

5. Write short notes on any **two** of the following : (10×2=20)

- (a) Strip chart recorder
- (b) Plotter
- (c) X-Y recorder.