

Printed Pages:

Paper Id: 131290

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B.Tech.
(SEM IV) THEORY EXAMINATION 2018-19
Electronic Measurements & Instrumentation

Time: 3 Hours

Total Marks: 70

- Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.
2. Any special paper specific instruction.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14
- Define random error and Gross error with suitable example.
 - What is the difference between analog and digital multimeter?
 - What is Quality factor and its importance in measurement?
 - How current is measured in the circuit using Ammeter?
 - What do you mean interpolation?
 - What is Instrument calibration?
 - What do you mean by Transducers and Inverse Transducers?

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21
- Explain the working of a source follower electronic voltmeter. Describe how the range of this voltmeter can be extended. Explain the use of zero adjustment and calibration resistors.
 - Design a multi range FET Voltmeter circuit and explain its working with diagram.
 - Explain how inductance is measured using bridges? Explain any one?
 - Explain how frequency and phase are measured by CRO.
 - Describe the different modes of operation of Piezo-electric transducers with suitable diagram.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7
- A batch of resistors each has a nominal resistance of 330Ω are to be tested and classified as $\pm 5\%$ and $\pm 10\%$ components are specified at 25°C , and their temperature coefficient is $-300 \text{ ppm}/^{\circ}\text{C}$. Calculate the maximum and minimum resistance for these components at 100°C and Calculate the maximum and minimum absolute resistance for each case.
 - Explain the construction of Series ohm meter and their application.
4. Attempt any *one* part of the following: 7 x 1 = 7
- Draw and explain the block diagram of digital frequency meter system.
 - Draw and explain the working of digital multimeter.
5. Attempt any *one* part of the following: 7 x 1 = 7
- How dielectric loss and unknown capacitance are measured by Schering Bridge?
 - Draw and explain the working of Wheatstone bridge.

6. Attempt any *one* part of the following: 7 x 1 = 7
- a) Why is delay line used in vertical section of an oscilloscope? Explain it in detail.
 - b) Explain DSO and its Application.
7. Attempt any *one* part of the following: 7 x 1 = 7
- a) Explain the working procedure of X-Y Plotter with neat sketch.
 - b) Explain the working of AC voltmeter calibration.