|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |

**Reg. No. :**

**Question Paper Code: 52049**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Second Semester

Electronics and Communication Engineering

15UEC209 - BASIC ELECTRONIC MEASUREMENTS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Precision measurement of resistances is generally carried out by:

(a) Potentiometer method (b) CRO method (c) Voltmeter-ammeter method (d) Bridge method

2. Mention the essential torques in indicating instruments

(a) Deflecting torque (b) Controlling torque (c) Damping torque (d) All the above

3. In an Anderson bridge, the unknown inductance is measured in terms of

(a) known inductance and resistance (b) known capacitance and resistance (c) known resistance (d) known inductance

4. In a CRO which of the following is not a part of electron gun

(a) Cathode (b) Grid (c) Accelerating anode (d) X - Y plates

5. While using signal generator, the modulation level can be adjusted upto

(a) 100% (b) 95% (c) 90% (d) 80%

PART - B (5 x 3 = 15 Marks)

6. Define precision and accuracy. Explain the difference between them.

7. Explain ohmmeter and its classification.

8. Define the expression for balance of the Wheatstone bridge.

9. Draw and Explain the block diagram of digital storage oscilloscope.

10. Define duty cycle.

PART - C (5 x 16 = 80 Marks)

11. (a) Classify and explain various types of errors in measurement. (16)

Or

(b) Compose notes on statistical analysis, probability of error and limiting error. (16)

12. (a) Explain the constructional details and difference between Ohmmeter series type and shunt type. (16)

Or

(b) Derive the expression for shunt type ohmmeter. (16)

13. (a) Construct the bridges to measure the unknown capacitance and inductance with neat diagram. (16)

Or

(b) Describe the circuit of Kelvin’s bridge used for measurement of low resistance. Derive the conditions for balance. (16)

14. (a) Draw the block diagram of general purpose CRO and explain its working. (16)

Or

(b) Discuss about vertical and horizontal deflection system of CRO. (16)

15. (a) Explain the functional block diagram of function generator and mention its features. (16)

Or

(b) How a spectrum analyzer can be used to operate and measure VHF? Draw the

waveforms and Block diagram. (16)