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Question Paper Code: 52409

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. An ammeter of 0-25 A range has a guaranteed accuracy of 1% of full scale reading. The current measured is 5 A. The limiting error is CO1- R
(a) 2.0% (b) 2.5% (c) 4% (d) 5%
2. The use of thermocouple meters for ac measurement leads to a scale which is CO2- R
(a) Linear (b) Square law (c) Logarithmic (d) Exponential
3. In ac bridge measurements, 'Wagner ground' means CO3- R
(a) a special RC connection to eliminate stray magnetic effects
(b) a special RC connection to eliminate stray capacitance effects
(c) an unwanted and unintended ground connection
(d) a large metal plate buried in ground connected to one corner of bridge
4. The deflection sensitivity of a CRO is generally expressed in CO4- R
(a) Meter/V (b) Cm/V (c) V/meter (d) V/cm
5. Without a spectrum analyzer, it is not possible to determine CO5- R
(a) Carrier frequency (b) Antenna pattern
(c) Pulse width (d) Spurious signal strength and its location

PART – B (5 x 3= 15 Marks)

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| 6. | Mention the significance of measurements. | CO1- R |
| 7. | Define the different essential torques in indicating instruments. | CO2- R |
| 8. | Compare the various types of Bridges. | CO3- R |
| 9. | What is the principle of CRO? | CO4- R |
| 10. | Define Spectrum Analyzer. | CO5- R |

PART – C (5 x 16= 80 Marks)

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| 11. | (a) Explain the measuring instruments on the basis of operating principle. | CO1-U | (16) |
| | Or | | |
| | (b) What is standard? Explain the different types of standards. | CO1-U | (16) |
| 12. | (a) Describe the construction and working of a permanent magnetic moving coil instruments. | CO2-U | (16) |
| | Or | | |
| | (b) Draw and explain the block diagram of digital multimeter. | CO2- U | (16) |
| 13. | (a) Explain in detail about the Kelvin bridge for measurement of unknown resistance. | CO3-U | (16) |
| | Or | | |
| | (b) Explain the working principle of Anderson's bridge and also derive its balance equations. | CO3-U | (16) |
| 14. | (a) Explain the block diagram of oscilloscope with a neat sketch. | CO4- U | (16) |
| | Or | | |
| | (b) Explain in details about Analog and Digital Storage oscilloscope. | CO4- U | (16) |
| 15. | (a) Explain how function generator generates sine, triangular and square wave signals. | CO5- U | (16) |
| | Or | | |
| | (b) Explain the spectrum analyzer and list its application. | CO5- U | (16) |