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Question Paper Code: 31543

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Fifth Semester

Electronics and Communication Engineering

01UEC503 - ELECTRONIC MEASUREMENT AND INSTRUMENTATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State the advantages of electronic measurements.
2. Mention the advantages and disadvantages of Anderson bridge.
3. Differentiate the digital storage oscilloscope with the analog oscilloscope.
4. Define deflection sensitivity of CRO.
5. What is a wave analyzer?
6. Give the importance of L, C and R measurements.
7. List the different types of digital voltmeter.
8. Define virtual instruments.
9. What is the importance of sample and hold circuit in digital data acquisition system?
10. How do you measure the power loss in a fiber optic measurement?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Classify and explain the different types of standards of measurements. (8)
(ii) With a neat diagram explain the construction, working and torque equation of PMMC instrument. (8)

Or

- (b) Explain how Maxwell's bridge is used for the measurement of unknown inductance. Derive its balance equation. (16)
12. (a) Explain in detail about the cathode ray oscilloscope. (16)

Or

- (b) Explain in detail about the Q meter. (16)
13. (a) (i) Draw the block diagram of an indirect type frequency synthesizer and explain. (8)
(ii) Describe the basic circuit of spectrum analyzer. How the spectrum of frequency modulated wave is displayed? (8)

Or

- (b) Explain in detail about the harmonic distortion analyzer and vector network analyzer. (16)
14. (a) Explain the working of digital multimeter. (16)

Or

- (b) Describe in detail about the computer controlled test systems with suitable examples. (16)
15. (a) Explain the elements of a digital data acquisition system. (16)

Or

- (b) (i) Explain the IEEE 488 bus with a neat diagram. (8)
(ii) How to measure the system loss using fiber optic techniques? (8)