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Question Paper Code : 21370

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Sixth Semester

Electronics and Communication engineering

EC 2351/EC 61/10144 EC 602 — MEASUREMENTS AND INSTRUMENTATION

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the various standards of measurements.
2. Mention the errors in moving coil meters.
3. Prepare the comparison table between analog and digital storage oscilloscope.
4. Write a short note on true RMS meters.
5. How do you measure the resistance values in digital RLC meters?
6. What is meant by network analyzer?
7. Define automatic ranging.
8. Write a short note on digital voltmeter.
9. List out the drawbacks of reflectometer.
10. Define the term transducer.

PART B — (5 × 16 = 80 marks)

11. (a) With neat circuit diagrams describe in detail about the following bridge measurement system.
 - (i) Maxwell bridge (8)
 - (ii) Wien bridge. (8)

Or

- (b) (i) Explain in detail about the various error measurement system with statistical analysis. (8)
- (ii) Describe in detail about the moving iron meters with suitable example. (8)

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12. (a) Discuss in detail about the function of delay time base oscilloscopes with neat diagram. (16)

Or

- (b) With neat diagram explain in detail about the function of following measurement system.
- (i) Vector meter (8)
- (ii) Q meter. (8)
13. (a) Explain the operations of RF signal and sweep generators. (16)

Or

- (b) Explain with neat diagrams, the working of the following :
- (i) Spectrum analyzer (8)
- (ii) Frequency synthesizer. (8)
14. (a) Discuss in detail about the computer controlled fully automatic digital instruments with test systems. (16)

Or

- (b) (i) Enumerate the measurement system of frequency and time intervals in a particular range of signal. (8)
- (ii) Discuss in detail about the digital multimeter. (8)
15. (a) With the neat diagram, explain the working of IEEE 488 bus, operations and characteristics.

Or

- (b) Draw and explain the block diagram of analog and digital data acquisition system. (16)