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Question Paper Code : 21535

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Sixth Semester

Electronics and Instrumentation Engineering

EI 2351/EI 61/10133 EI 601 — MODERN ELECTRONIC INSTRUMENTATION

(Common to Instrumentation and Control Engineering)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a digital IC tester?
2. What is known as auto ranging?
3. State the purpose of storage oscilloscopes.
4. List the major components of a magnetic tape recorder.
5. Name a few interface standards.
6. Define the term "Virtual Instrumentation".
7. What is known as serial interface converter?
8. What is meant by cluster?
9. State the purpose of DAQ cards.
10. Name the type of controllers used in temperature control.

PART B — (5 × 16 = 80 marks)

11. (a) Describe the operation of a microprocessor based digital multimeter with autoranging and self-diagnostic features with necessary sketches. (16)

Or

- (b) Explain how frequency and pulse width are measured in digital instruments. (16)

12. (a) With a neat block diagram describe the function of a general purpose type of cathode ray oscilloscope. (16)

Or

- (b) (i) Explain the operation of a Q meter. (8)
(ii) Describe the operation of a X-Y recorder with necessary diagrams. (8)

13. (a) Discuss the significance of Bus Interface Standards in an instrumentation system. Also, explain the operation of RS-232 C with its signal definitions and pin configuration. (16)

Or

- (b) Explain the operation of EIA 485 interface standard with necessary diagrams. (16)

14. (a) Describe the architecture of a virtual instrumentation system with a neat block schematic diagram. (16)

Or

- (b) Briefly discuss the following :
(i) Software in virtual instrumentation. (8)
(ii) Loops and charts in VI programming techniques. (8)

15. (a) Explain the design of digital voltmeters with transducer input, with necessary sketches. (16)

Or

- (b) Describe how ON/OFF controller for temperature control applications is designed with necessary diagram. (16)