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Question Paper Code : 31428

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Electronics and Instrumentation Engineering

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

(Common to Instrumentation and Control Engineering)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Compare ramp type and integrating type digital voltmeter.
2. Write a short note on digital IC tester.
3. What is the purpose of blanking circuit in cathode ray oscilloscope?
4. Compare RZ and NRZ methods of digital recording.
5. Mention the applications of virtual instrumentation.
6. Write a short note on for and while loops in virtual instrumentation.
7. Compare RS 422 and RS 485.
8. Mention the electrical properties of RS232.
9. What are the major components of pc based data acquisition system?
10. What is a plug in DAQ device?

PART B — (5 × 16 = 80 marks)

11. (a) (i) How is frequency measured using digital frequency meter. (10)
(ii) Mention the advantages of digital voltmeter. Explain the working of ramp type digital voltmeter. (6)

Or

- (b) (i) Explain the self diagnostic features of microprocessor based digital multimeter in detail. (10)
(ii) Describe the measurement of pulse width in detail. (6)
12. (a) (i) Write the working of analog storage oscilloscope in detail. (10)
(ii) What is the need of sampling oscilloscope? Explain its operation in detail. (6)

Or

- (b) (i) How is matrix display realized using LEDs. (3)
(ii) Explain the working of XY recorder in detail. (5)
(iii) What is the purpose of data logger? Mention its advantages and explain its working in detail. (8)
13. (a) (i) Define Virtual instrumentation. Draw the block diagram of virtual instrumentation and compare it with traditional instrument. (10)
(ii) Compare scope, sweep and chart used in virtual instrumentation. (6)

Or

- (b) (i) Explain arrays and clusters operations in detail. (10)
(ii) Write a VI programme to read the data from a file and to write data in another file using I/O operations. (6)
14. (a) (i) Explain the 25 pin connector and frame format of RS232. (8)
(ii) Describe the communication between two nodes in RS232. (8)

Or

- (b) (i) Explain the two modes of operation of RS485. (6)
(ii) Describe the function of seven layers of OSI model. (10)

15. (a) Create a VI to measure and control the temperature of a continuous stirred tank reactor using ON/OFF controller. (16)

Or

- (b) Create a VI to realize digital voltmeter by acquiring the data using DAQ card. (16)
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