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Question Paper Code : 21428

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 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.   What are digital volt meters?

2.   Draw the basic block diagram of digital frequency meter.

3.   A 4 ½ digit voltmeter is used for voltage measurements.

     (a)   Find its resolution

     (b)   How would 12.98V be displayed on 10V range?

     (c)   How would 0.6973 be displayed on 1V range?

     (d)   How would 0.6973 be displayed on 10V range?

4.   What are the advantages of magnetic tape recorders?

5.   What are the advantages of modern instrumentation systems?

6.   Write a note on renal interface converters.

7.   What are the key elements of virtual instrument?

8.   What are the tools available in control palette?

9.   What is the overview of DAQ software?

10. Define buffered I/O and its advantages.

PART B — (5 × 16 = 80 marks)

11. (a) With a neat diagram explain in detail the working of microprocessor based DMM. (16)

Or

(b) Explain in detail about

(i) Digital voltmeter. (8)

(ii) Digital IC tester. (8)

12. (a) (i) Draw the schematic diagram of a storage type oscilloscope and explain its principle. (8)

(ii) What is the principle of sampling oscilloscope? (2)

(iii) Write a note on

(1) Multiple beam oscilloscope. (2)

(2) Multiple trace oscilloscope. (2)

(3) Impulse wave form oscilloscope. (2)

Or

(b) With a neat diagram explain in detail about

(i) Q meter. (5)

(ii) Data loggers (6)

(iii) X-Y recorders. (5)

13. (a) Write a detailed note on EIA 232 interface standard.

Or

(b) Discuss in detail about EIA 422 interface standard.

14. (a) (i) Explain how lab VIEW can be used to acquire, analyze and present a measurement and automatic application. (8)

(ii) What is modular programming? Consider an example to explain how to create a sub VI (8)

Or

(b) (i) Illustrate the operation of shift register showing the front panel and block diagram to find the current count, previous count, count two iterations ago and count three iterations ago and explain. (8)

(ii) Develop a VI to check if a number is positive or negative. If yes' then the VI should calculate and display the square root. Otherwise it should display a message and give a value of − 9999.00 as output. Solve using (1) care structure (2) select function & (3) formula node. (8)

15. (a) (i) Discuss in detail about PCI and its features. (4)

    (ii) Discuss the different types of GPIB hardware configurations. (4)

    (iii) Explain the techniques used in IMAQ for acquiring and display images. (8)

Or

(b) (i) Explain in detail about DAQ system components and DAQ software overview with the help of neat block diagram? (8)

    (ii) Draw the block diagram to explain the motion control system development software for configuration, prototyping and development. (8)

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