

B.E. DEGREE EXAMINATIONS: NOV / DEC 2010

Seventh Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

U07EIE03: Virtual Instrumentation

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. Customization of plots/Graphs can be done by
a) Plot resend b) chart c) Lange d) data operator
2. _____ is the common mode for displaying chart.
a) Scope chart b) slip chart c) scope chart d) display chart
3. Which of the following is used in DAQ system to provide protection against surges?
a) sample & hold b) Zener diode c) TVS d) optocoupler
4. Analog O/P uses the sequence of _____
a) Wait, start, write, configuration b) Configuration, write, start, wait
c) Write, configuration, start, wait d) Start, configuration, write, wait
5. The Max cable length for RS485 is
a) 220 m b) 15 m c) 1220 m d) 1020 m
6. The GP IB band width is
a) 1MB's b) 3MB's c) 1-4MB's d) 1-8 MB's
7. Get date / time string is available in
a) Timing and Dialog pattern b) Match pattern c) Concatenate strings d) One dimensional
8. _____ is enabled in the simplest mode it works as an accumulator.
a) Concatenate b) auto indexing c) append d) counter
9. The filters which allows the raise of frequency through a filter
a) Low pass b) Pass band c) high pass d) power filter
10. One –Third octave analysis is available in
a) Sound and vibration tool set b) Window palette c) Error in d) Error out

PART B (10 x 2 = 20 Marks)

11. State Sampling Theorem.
12. Differentiate ADC and DAC.
13. What is the need for DAQ card?

14. What is meant by differential inputs?
15. Write the limitations of RS232 communication?
16. Mention the advantages of CAN bus.
17. Give an example for loop in Virtual Instrumentation.
18. List out the different data types in VI.
19. What are the advantages of power spectrum?
20. Why HTML generation is required for VI implementation?

PART C (5 x 14 = 70 Marks)

21. a) (i) Discuss in detail about the representation of analog signals in the digital domain. (7)
(ii) Discuss about any one type of analog to digital conversion technique. (7)

(OR)

- b) (i) What is meant by sampling? What is the need for sample and hold in digital implementation? (7)
(ii) What is meant by quantization error? How it can be avoided? (7)

22. a) Describe in detail about the PC based data acquisition system.

(OR)

- b) (i) What is meant by multiplexing of analog inputs, explain it with suitable example. (7)
(ii) Explain the use of timer and counter in the universal DAQ card. (7)

23. a) Explain in detail about the various standards available for external instruments for a PC.

(OR)

- b) (i) Compare ISO and OSI model for serial bus. (7)
(ii) Differentiate MOD bus and CAN bus. (7)

24. a) (i) Explain the concept of sub VI in graphical programming. (7)
(ii) Explain the following with suitable example. (7)

(a) Arrays

(b) Formulae nodes

(OR)

- b) Explain in detail about case and sequence structures with suitable examples.

25. a) Construct a simple temperature indicator for boiler control with suitable VI blocks.

(OR)

- b) Explain Windowing and filtering Tools.
