Reg. No. : | | | | | | | | | | |

Question Paper Code: 41661

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Sixth Semester

Electronics and Instrumentation Engineering

14UIC601 - MODERN ELECTRONIC INSTRUMENTATION

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The principle of voltage to time conversion is used in

   (a) dual slope type DVM

   (b) successive approximation type DVM

   (c) integrating type DVM

   (d) none of these

2. A time base selector basically consists of

   (a) LC oscillator (b) RC oscillator

   (c) Crystal oscillator (d) Wien bridge oscillator

3. Q factor is defined as

   (a) reactance/resistance (b) resistance/reactance

   (c) resistance/impedance (d) impedance/resistance

4. A dual beam CRO uses

   (a) electronic switch (b) two electron guns

   (c) one electron gun (d) two time base generator circuits

5. Maximum Distance of EIA 422 has

(a) 1000 metres (b) 2000 metres
(c) 4500 metres (d) 1500 metres

6. The data rates of EIA-232 has

(a) 150K (b) 115K (c) 200K (d) 300K

7. The initial value iteration (i) of the FOR LOOP is

(a) 0 (b) 1 (c) 2 (d) 3

8. Control palette contains

(a) indicators (b) controls
(c) functions (d) controls and indicator

9. Plug in device is

(a) DAQ card (b) VISA
(c) I/O assistant (d) Both (a) and (b)

10. ADC can be considered as a

(a) decoding device (b) encoding device
(c) multiplexer (d) summing amplifier

PART - B (5 x 2 = 10 Marks)

11. Define resolution and sensitivity of digital meters.

12. List the various controls on the front panel of a signal generator.

13. State the advantages of RS 485 interface.

14. Define virtual Instrumentation.

15. List the operations of DAQ assistant.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain the principle of successive approximation type DVM. (8)

(ii) With a neat block diagram, discuss in detail about the micro processor based DMM. (8)

Or

(b) Explain in detail how frequency and period are measured in digital instruments. (16)

17. (a) (i) Describe with diagram the operation of a Sampling CRO. (8)

(ii) Explain with the help of a block diagram the operation of a function generator. (8)

Or

(b) (i) Describe the operation of an X-Y recorder with the help of block diagram. List four applications of an X-Y recorder. (8)

(ii) Explain the operation of a data logger. State the functions of each block. (8)

18. (a) Describe the functions of each layers of ISO/OSI model in detail. (16)

Or

(b) (i) Explain the working of EIA 422 interface standard. (8)

(ii) Describe the operation of 4-20 mA converters. (8)

19. (a) (i) Explain different types of loops used in Lab VIEW. (8)

(ii) Create a VI to find the factorial of a given number using a While loop. (8)

Or

(b) (i) Build a VI to find the sum and product of array elements and explain. (8)

(ii) Draw and explain the importance of the basic elements of graph. (8)

20. (a) Describe the major components of a PC-based data acquisition system with neat sketch. (16)

Or

(b) Explain with necessary sketch how ON/OFF controller for temperature application is designed. (16)

———————