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

Question Paper Code: 46601

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Sixth Semester

Electronics and Instrumentation Engineering

14UIC601-MODERN ELECTRONIC INSTRUMENTATION

(Regulation 2014)

Duration: Three Phours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Capacitance is measured by

   (a) Wien bridge (b) Schering bridge
   (c) Maxwell's bridge (d) Owen bridge

2. A time base selector basically consists of

   (a) LC oscillator (b) RC oscillator
   (c) Crystal oscillator (d) Wien bridge oscillator

3. To increase Q factor of a coil, the wire should be

   (a) long (b) thin
   (c) thick (d) long and thin

4. Two sinusoidal signals of equal amplitude and frequency are applied to X and Y plate of CRO respectively. The observed Lissajous pattern is a straight line. The phase shift between signals is Cathode

   (a) zero (b) 90˚ (c) Either zero or 180˚ (d) Either 90 ˚ or 270˚

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. Control palette contains

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

8. Control palette contains

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

9. Digital to Analog Conversion is _____ Analog to Digital Conversion

(a) less complex than (b) more complex than
(c) as complex as (d) unpredictable

10. What would be a typical settling time for a general-purpose 8-bit ADC?

(a) 1 ns to 10 ns (b) 10 ns to 100 ns (c) 1 ms to 10 ms (d) 100 ms to 1s

PART - B (5 x 2 = 10 Marks)

11. What are the advantages of dual slope over Ramp type DVMs?

12. What are the advantages of RS 485 interface?

13. What are the applications of current loop?

14. Mention any two applications of virtual instrumentation.

15. List the operations of DAQ assistant.

PART - C (5 x 16 = 80 Marks)

16.(a)(i) Modify the functionof multimeter to measure voltage, current and resistance. (8)

(ii) Write short note on digital frequency meter with suitable diagram. (8)

Or

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

17. (a) With a neat block diagram explain the sampling methods used in digital oscilloscope. (16)

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

(ii) Explain the working of EIA 422 interface standard. (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) Using DAQ modules and appropriate communication explain in detail how an industrial process is Controlled?. Elaborate in detail. (16)

Or

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