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

Question Paper Code: 46601

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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. 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 number of bits transmitted or received per second is defined as

(a) Transmission rate (b) Reception rate
(c) Transceiver rate (d) Baud rate

7. Lab VIEW follows _____ type of program execution method.

(a) Top down approach (b) Left to right approach
(c) Bottom up approach (d) Sequential approach

8. The string function in Lab VIEW can be represented with the following colour coding

(a) Orange (b) Blue (c) Pink (d) Green

9. Identify the resolution of a 12-bit data converter?

(a) 0.00024% (b) 0.0041% (c) 0.024% (d) 0.41%

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. Draw the block diagram of digital IC tester and name its parts.

12. State sampling theorem and specify its significance.

13. List the advantages of 20mA current loop.

14. Distinguish between 'STOP if TRUE' and 'CONTINUE if TRUE' function in a WHILE loop.

15. Define resolution and write its formulae.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Modify the function of 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) Explain with functional block diagram the operating principle of a CRO. (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) Compare text based programming with graphical programming technique. (8)

(ii) Lab VIEW follows data flow programming-justify with an example. (8)

Or

(b) (i) Compare and contrast a traditional instrument with a virtual instrument. (8)

(ii) Discuss the customizing components of chart and graph in Lab VIEW. (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)

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