

Reg. No. :

--	--	--	--	--	--	--	--	--	--

**Question Paper Code: 46601**

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Electronics and Instrumentation Engineering

14UIC601-MODERN ELECTRONIC INSTRUMENTATION

(Regulation 2014)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. An average-reading digital multimeter reads 10V when fed with a triangular wave, symmetric about the time-axis. For the same input an rms-reading meter will read  
(a)  $20/\sqrt{3}$                       (b)  $10/\sqrt{3}$                       (c)  $20\sqrt{3}$                       (d)  $10\sqrt{3}$
2. A digital frequency counter can be converted to DVM by addition of a suitable  
(a) Voltage controlled oscillator                      (b) D/A converter  
(c) Power amplifier                      (d) Operational amplifier
3. 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)  $90^\circ$                       (c) Either zero or  $180^\circ$                       (d) Either  $90^\circ$  or  $270^\circ$
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. Control palette contains
- (a) indicators (b) controls (c) functions (d) controls & indicator
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. 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 (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. Explain the principle of successive approximation type DVM. (8)
12. Describe with diagram the operation of a Sampling CRO. (8)
13. Analyze the differences exist between RS 232, RS 422 and RS 485 communication interfacing standards. (8)
14. Explain different types of loops used in Lab VIEW. (8)
15. Give the detailed installation steps involved in interfacing DAQ hardware with PC. (8)