GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2021
VIRTUAL INSTRUMENTATION
EI801C

TIME ALLOTTED: 3 hrs **FULL MARKS: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	CO No.
1. i)	To copy an item on the front panel or block diagram, press <Ctrl-C> and then <Ctrl-V>, or simply hold _____ and click and drag and drop the item. a. Shift b. Alt c. Ctrl-Shift d. Ctrl	1	CO1
ii)	When placing a new function, control, indicator, or constant, the _____ feature wires the terminals together if placed within close enough proximity. a. Block Diagram Cleanup b. Automatic Error Handling c. Automatic Wiring d. Retain Wire Values	1	CO1
iii)	_____ any object in the LabVIEW environment provides quick access to most of the properties that can be changed. a. Left-Clicking b. Right-Clicking c. Selecting d. Ctrl-Clicking	1	CO1
iv)	Digital to analog conversion can be done by a. Weighted resistor method b. R-2R ladder c. Inverted R-2R-ladder method d. All of the above	1	CO4

v)	To find a quick description of an object in the LabVIEW environment, simply turn on _____ by pressing _____ and hovering over the object. a. Context Help, Ctrl-U b. Detailed Help, Ctrl-I c. Context Help, Ctrl-H d. LabVIEW Help, Ctrl-Z	1	CO1
vi)	For Loops in LABVIEW have auto-index output tunnels, which automatically create a. array of data b. graphs with data c. cluster of data d. all of the above	1	CO4
vii)	When the VI that are being created or edited contains errors then a. the Run button appears broken b. the red button appears c. the pause button appears d. the continuous run button appears	1	CO1
viii)	The percentage quantization error of a 10bit ADC is a. 0.1% b. 1% c. 10% d. 0.01%	1	CO4
ix)	Which of the followings is used for parallel communications a. RS232 b. RS232a c. CAT5 d. IEEE 1284	1	CO3
x)	GPIB is related to a. IEEE808.2 b. IEEE485 c. IEEE488 d. IEEE1284	1	CO3
xi)	A _____, which consists of eight digital lines, can be used to input or output digital data. a. Multifunction Port b. Input Port c. Output Port d. Digital Port	1	CO3
xii)	A subVI corresponds to a. a interrupt in text-based programming languages b. a subroutine call in text-based programming languages c. a conditional loop in text-based programming languages d. All of the above	1	CO2

GROUP – B
(Short Answer Type Questions)

Answer any ***three*** from the following: **3×5=15**

		Marks	CO No
2.	With schematic diagram, explain the operating principle of R-2R Ladder type DAC.	5	CO4
3.	Draw and explain the basic difference between the traditional instruments and software based virtual instruments.	5	CO1
4.	When sequence structure is used in Labview? How does the sequence structure work? Expalin with an example.	5	CO2
5.	Explain in detail about the architecture of PCMCIA with its applications.	5	CO3
6.	List the similarities and differences between PXI and VXI.	5	CO3

GROUP – C
(Long Answer Type Questions)

Answer any ***three*** from the following: **3×15=45**

		Marks	CO No
7. a)	Mention the features of Block Diagram of LabVIEW	7	CO1
b)	Explain how For Loop and While Loop are used in VI programming.	8	CO2
8. a)	What is SubVI in LabVIEW? List the steps to edit a SubVI icon and call it by other programs.	8	CO2
b)	What do you mean by data flow programming? Explain the characteristics of data flow programming. Describe the process of data flow programming with respect to LabVIEW.	7	CO2
9. a)	Compare the Array and cluster date types in LabVIEW	5	CO2
b)	Mention the features of Front Panel of LabVIEW.	5	CO1
c)	With schematic diagram, explain the operating principle of Integrating type of ADC.	5	CO4
10. a)	What is Enum in LabVIEW?	2	CO2
b)	Expalin the features of it.	5	CO2
c)	How to index an array in LabVIEW?	8	CO2
11.	Write Short Notes on any three of the followings		CO3
a)	IEEE488.2		
b)	Case structure in LABVIEW	5	CO2
c)	SAR type of ADC	5	CO4
d)	Asynchronous Counter	5	CO4