Certified LabVIEW Associate Developer Exam

Test Booklet

Instructions:

If you did not receive this exam in a sealed envelope stamped "NI Certification," **DO NOT ACCEPT** this exam. Return it to the proctor immediately. You will be provided with a replacement exam.

Please do not detach the binding staple of any section. If any part of the exam paper is missing or detached when returned to National Instruments, you will be deemed to have failed the exam.

Please do not ask the proctor for help. If you believe the intent of a question is not clear, you may note that question, and your reasons for choosing the answer you believe best fits the question.

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Exam Details:

Time allocated: 1 hour
Type of exam items: Multiple choice
Number of exam items: 40 questions
Passing Grade: 70%

IMPORTANT: When you have completed this exam, place it in the provided envelope with you answer sheet and SEAL the envelope. Give the sealed envelope to your proctor.

Answer Sheet:

To quickly check your answers against the solutions on the Solutions Page, record your answers on this Answers Sheet. Detach this page and record your answers as you go along This page is not included in the actual CLAD exam; it is included here for practice purposes only. The Solutions Page is at the end of the Sample Exam.

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Sample Exam Items:

1. In what instance would you use the Probe tool rather than Highlight Execution?
    a. To see the flow of data
    b. To see the value of a wire in real time
    c. To look into a SubVI, as the process is running
    d. To slowdown the VI to show values in wires

2. Which of the following statements regarding Array constants are <u>NOT</u> true:
    a. When you create an Array constant on the block diagram, it is not visible on the Front Panel.
    b. You cannot resize an Array constant to include more than one element.
    c. You can copy or drag an existing Array on the Front Panel to the Block Diagram to create a constant of the same data type.
    d. All array operations can be performed on an Array constant

3. In the figure below, what will Result equal when this calculation is executed?
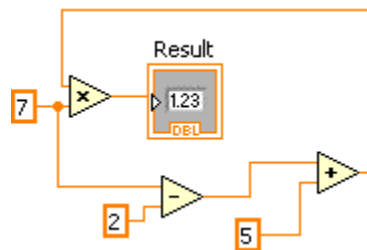
    a. 55
    b. 70
    c. 65
    d. Indeterminate

4. The function of a Cluster is to:
    a. Allow grouping of mixed data types into logical structures.
    b. Present data on the Front Panel using charts or graphs.
    c. Provide a means of differentiating between data types on the Block Diagram.
    d. Separate data objects by data type on the Front Panel.

5. Can Probes be attached to objects on the Front Panel:
    a. Yes.
    b. No.

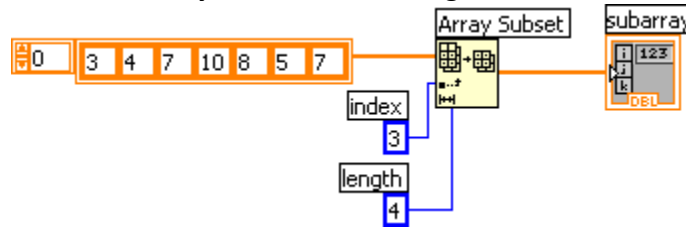6. What is the result in **Array** after the following code has executed?
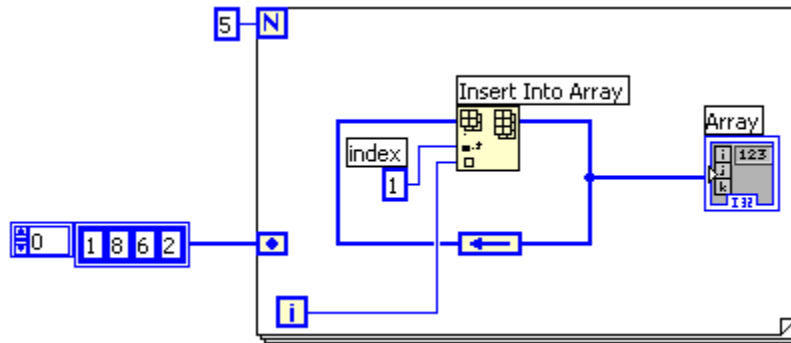
    a. A 1-D array of {1, 4, 3, 2, 1, 0}
    b. A1-D array of {1, 8, 0, 1, 2, 3, 4, 6, 2}
    c. A 1-D array of {1, 4, 3, 2, 1, 0, 8, 6, 2}
    d. A 1-D array of {1, 8, 0, 1, 2, 2, 9}

7. What is the result in **new string** after the following code has executed?
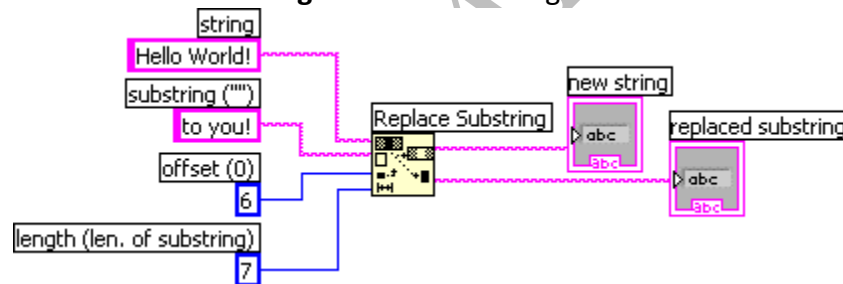
    a. Hello to you!
    b. Hello Wto you!
    c. Hello to you!!
    d. Helloto you!

8. Which of the following display options are available for strings on the Front Panel?
    a. '\' Codes
    b. Password
    c. Hex
    d. All of the above

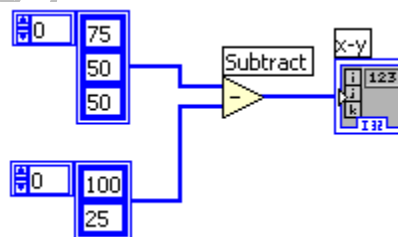9. What is the result in **subarray** after the following code has executed?

a. A 1-D Array of {8, 5, 7}
b. A 1-D Array of {10, 8, 5}
c. A 1-D Array of {10, 8, 5, 7}
d. A 1-D Array of {7, 10, 8, 5}

10. In the figure below, the output of Array Size is

a. a 1-D Array of {2, 3}
b. a 1-D Array of {3, 2}
c. 2
d. None of the above
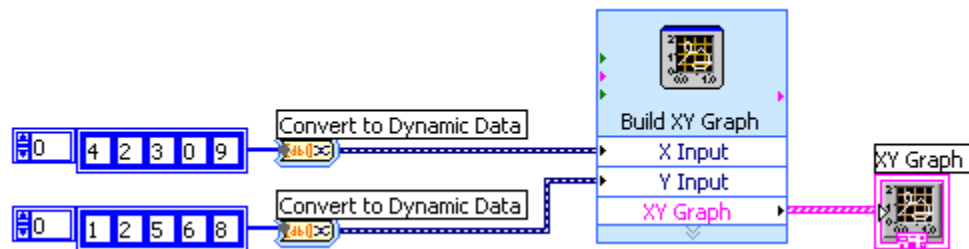
11. What is the result of the following Array subtraction?

a. A 1-D Array of {-25, 25, 50}
b. A 1-D Array of {-25, 25}
c. A 2-D Array of {{-25, -50, -50} , {50, 25, 25}}
d. A 1-D Array of {75, -50, 25}

12. Which of the following allows you to plot any set of points, evenly distributed or not?
    a. Waveform Graph
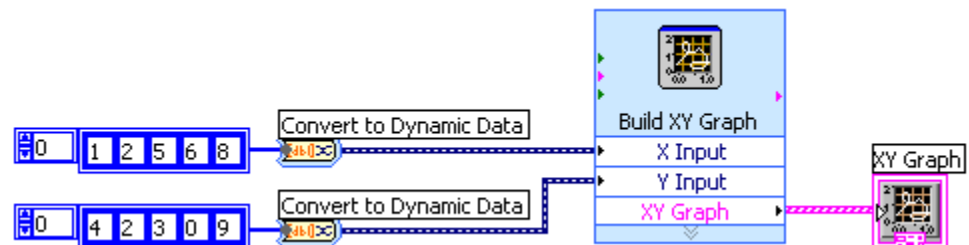   b. Waveform Chart
    c. XY Graph
    d. Both A. and C.
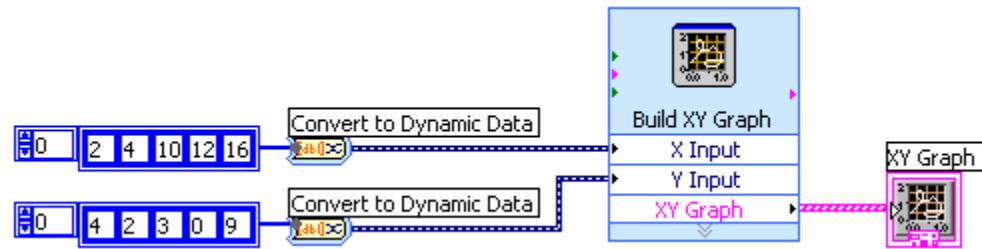
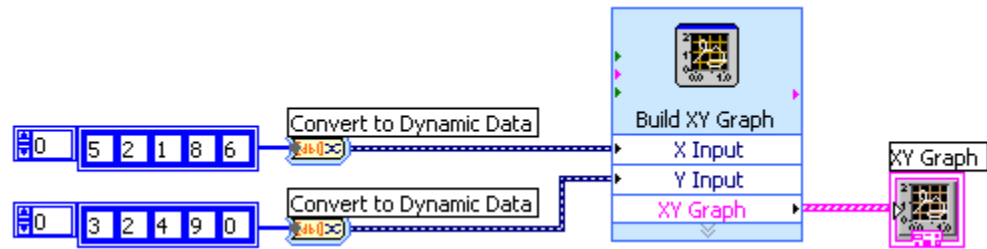13. Which of the following produces this XY Graph?
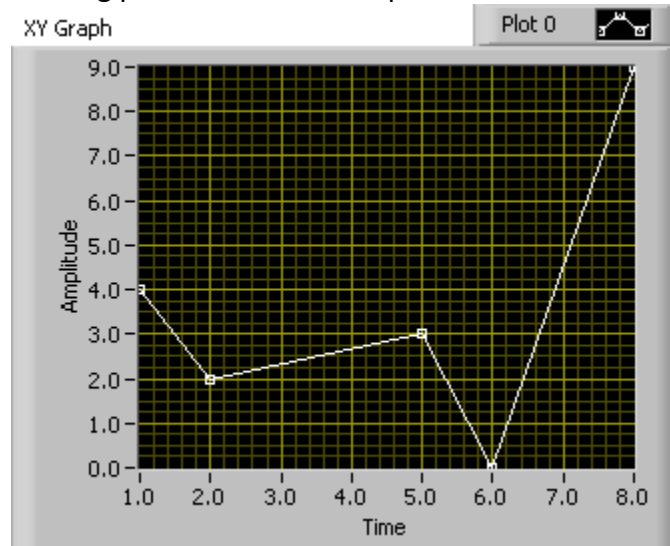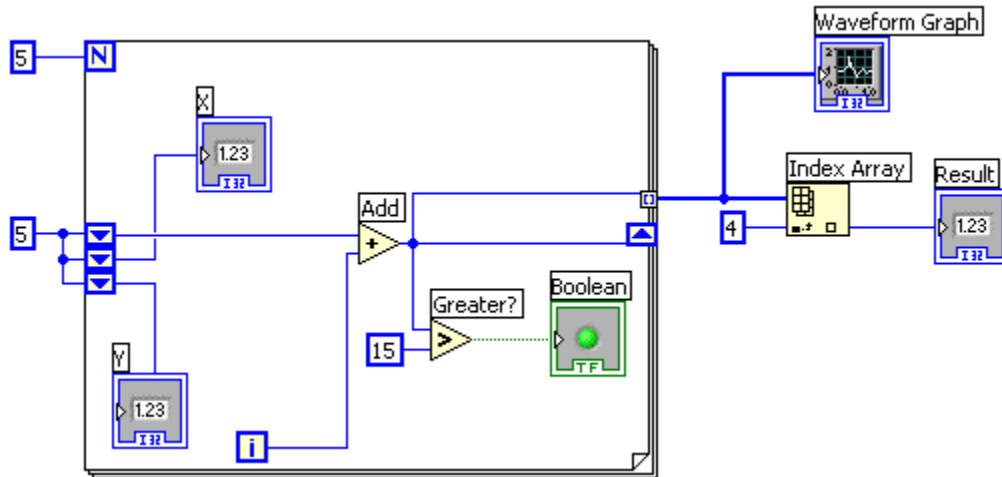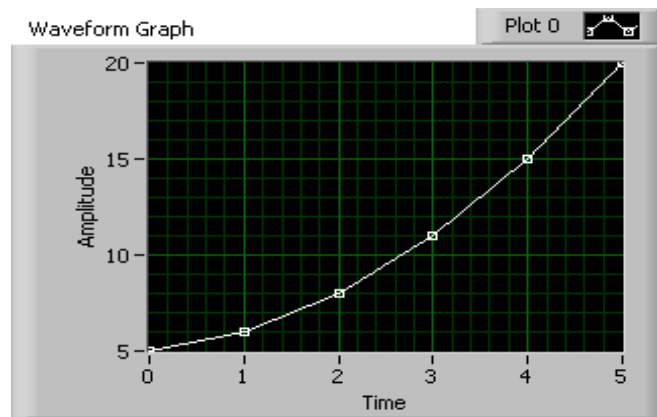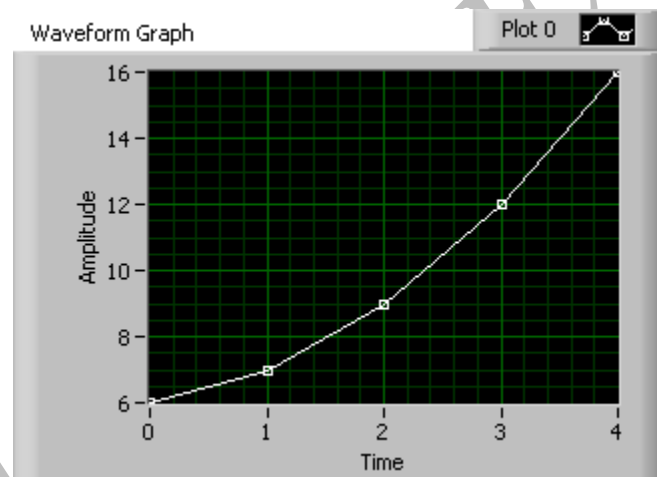

a. A

b. B

c. C

d. D

14. Which of the graphs below matches the output in the Waveform Graph indicator after the following code has executed?
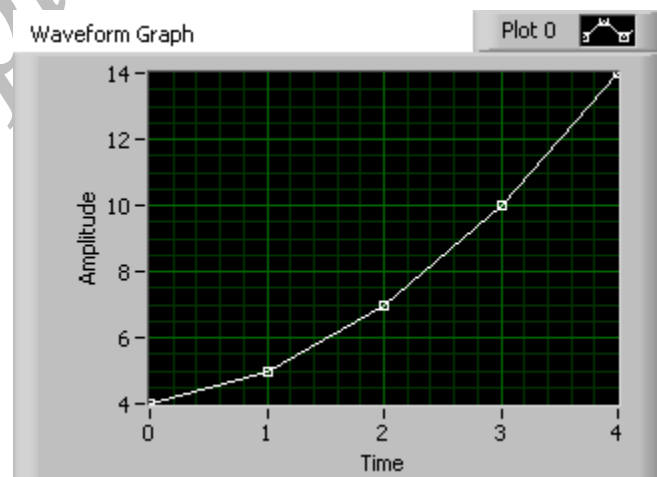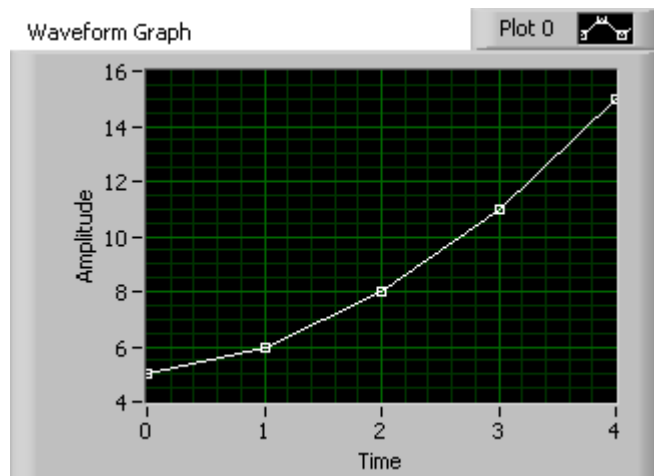
a. A

b. B

c. C

d. D

15. The Wait function can be added to While Loops:
    a. To free up available memory.
    b. To allocate memory used by the CPU.
    c. To allow the processor time to complete other tasks.
    d. To reserve which processor the code is running on.

16. Which of the following methods is NOT a method to create a 1-D Array:
    a. Place an Array Shell on the Front Panel and drag a Control into the shell.
    b. Use a While Loop with auto-indexing disabled.
    c. Use a For Loop with auto-indexing enabled.
    d. Use the Initialize Array function.

17. Which of the following statements is true regarding the execution of the following code?
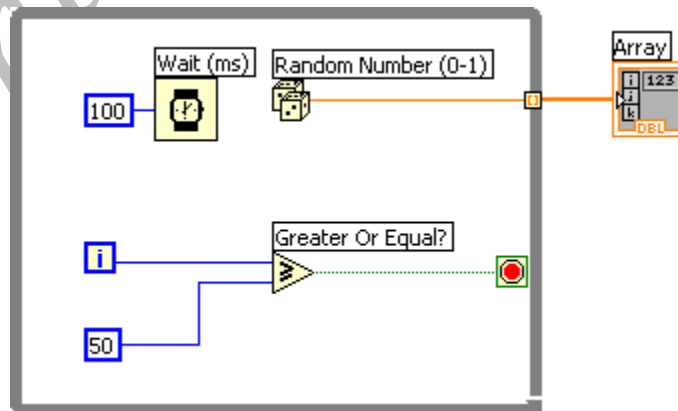
a. The loop will iterate 51 times.
b. The loop will iterate 50 times.
c. The loop will iterate 49 times.
d. A For Loop that has a 50 wired to the count terminal will perform the same operation.

18. Which of the following accurately describes the output that results from execution of the following loop?
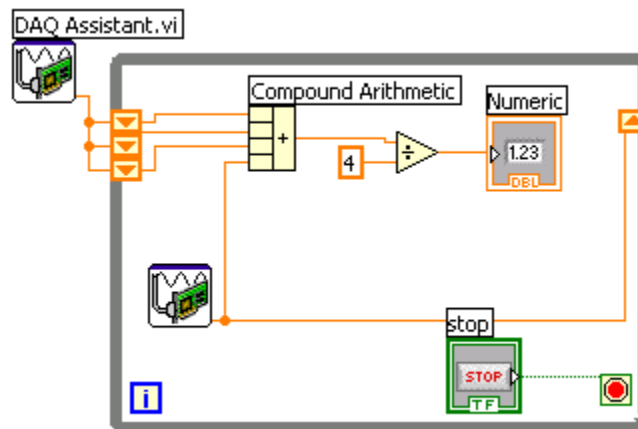
a. The last three values from the DAQ Assistant will be displayed.
b. A running average of all measurements will be displayed.
c. An average of the last four measurements will be displayed.
d. None of the above

19. Which of the following statements is NOT valid:
a. You can make a Cluster of Clusters.

b. You can make an Array of Arrays.

c. You can make a Cluster of Arrays.

d. You can make an Array of Clusters.

20. Which of the following statements is true?
a. The default setting for a tunnel into or out of a For Loop has auto-indexing enabled if the data being passed is an array.
b. The default setting for a tunnel into or out of a While Loop has auto-indexing disabled if the data being passed is an array.
c. Both A. and B. are true
d. None of the above

21. Which of the following statements is true regarding the use of Coercion Dots?

    a. Coercion Dots improve program performance.
    b. Coercion Dots represent a conversion from one data type to another.
    c. Coercion Dots increases memory usage
    d. Both A. and B.
    e. Both B. and C.

22. Which of the following graphs matches the result in **Comparison Values** after the following code has executed?
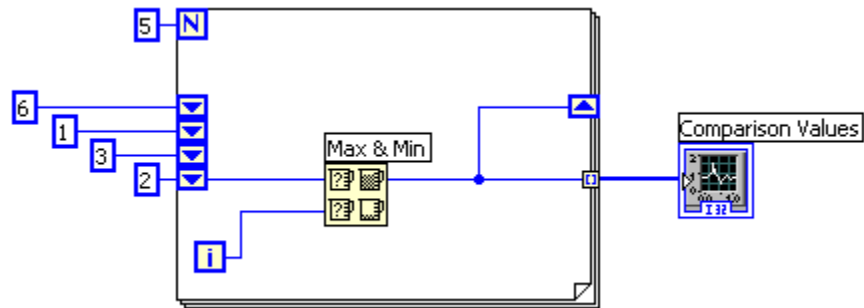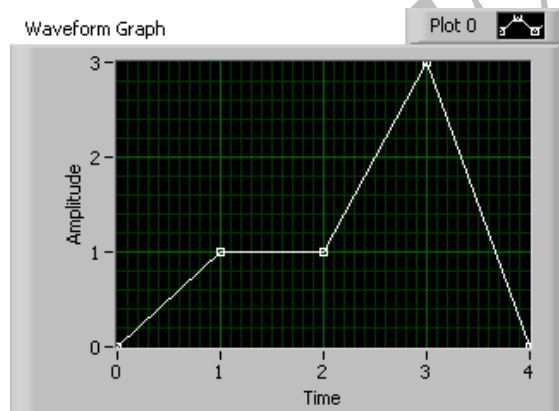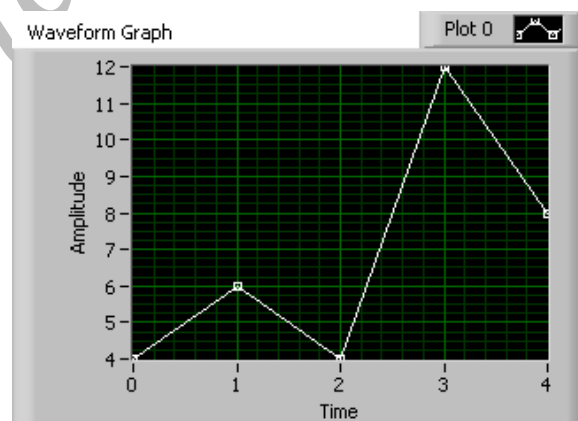

    a. A
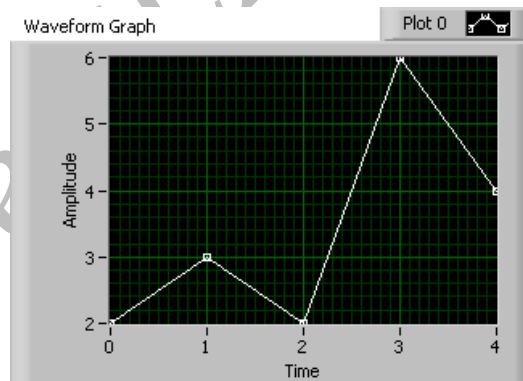
b. B
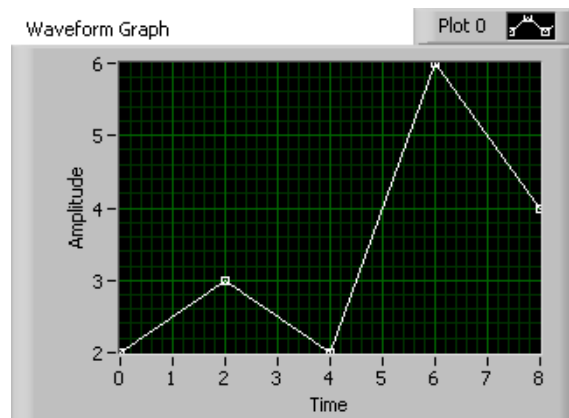
c. C

d. D

23. Which combination of words correctly completes the following statement?
Unlike _____, which display only the most recent array of values written to them, _____ update periodically and maintain a history of the past data.

    a. graphs; charts
    b. charts; plots
    c. plots; graphs
    d. charts; graphs

24. Which of the following will allow you to have multiple plots on a Waveform Graph?
    a. Bundle two 1D arrays of X and Y data together for each plot. Then build an array of these clusters and wire it to the Waveform Graph indicator.
    b. Build an n-dimensional array of data with each plot in a separate row (or column) in the array, then wire the array to the Waveform Graph indicator.
    c. Bundle the elements of each waveform into a cluster and build an array of these clusters, then wire the array to the Waveform Graph indicator.
    d. Both B. and C.

25. Which of the following is NOT a traditional debugging feature used to help find errors in a VI:
    a. Highlight Execution.
    b. Single Stepping
    c. Breakpoints
    d. Stop Values

26. What VI is typically used to terminate an Error Cluster wire and to display any error message?
    a. Merge Errors
    b. One Button Dialog/Two Button Dialog
    c. Generate Front Panel Activity
    d. Simple Error Handler

27. The following figure is an example of which common type of VI architecture?
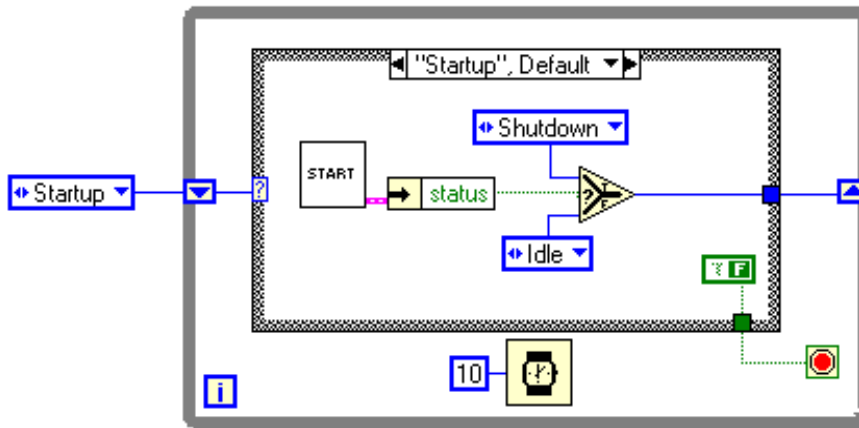
    a. Multiple Case Structure VI
    b. General VI
    c. State Machine VI
    d. Parallel Loop VI

28. Clicking on the _____ button allows you to bypass a node in the Block Diagram without single-stepping through the node.

    a. Step Into
    b. Step Over
    c. Step Out
    d. Step Through

29. Variants are used for all of the following but:
    a. Passing values between programs written with different compilers
    b. Allowing software to achieve a greater degree of generality
    c. Representing any data type
   d. Converting from fixed point to floating point data

30. You can use all of the following data types as inputs to the case selector terminal except:
    a. Doubles
    b. Enumerated type values
    c. Strings
    d. Integers

31. The Error list shows all of the following but:
   a. Items with errors
   b. Errors and warnings
   c. Details about the warnings
   d. Error Codes

32. The following breakpoint does which of the following:
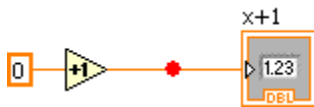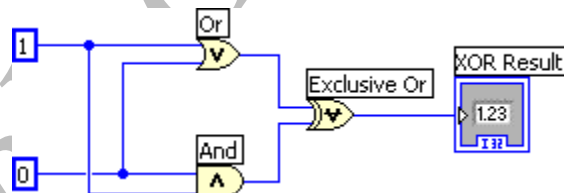

   a. Causes the VI to abort
   b. Causes the VI to pause
   c. Causes the VI to single step over the addition
   d. Causes the VI to single step over the indicator

33. Which of the following is NOT a component of an Error Cluster?
   a. Status.
   b. Code.
   c. Source.
   d. VI name

34. What is the value in **XOR Result** after the following code has executed?

   a. 0
   b. 1
   c. True
   d. False

35. Which of the following statements regarding the index of Arrays are NOT true:
   a. The index is used to access a particular element of an Array.
   b. The index ranges from 1 to n.
   c. A 2-D Array has both a column index and a row index.
   d. The index ranges from 0 to n-1.

36. Clusters provide a user with which of the following benefits?
    a. Clusters allow a logical grouping of related data elements.
    b. Clusters increase the number of Connector Pane terminals of SubVI's.
    c. Clusters help to reduce wire clutter on the Block Diagram.
    d. Both A. and C.

37. Which chart update mode plots new data from left to right, then clears the chart and plots the newer data ?
    a. Strip Chart
    b. Scope Chart
    c. Sweep Chart
    d. Step Chart

38. Which of the following methods will create an XY Graph with two plots?
    a. Create a single cluster from two arrays of X values and two arrays of Y values in an X,Y, X,Y pattern.
    b. Bundle the X and Y array pairs together into two clusters and then create an array of these two clusters.
    c. Bundle the X and Y array pairs together into two clusters and create a cluster of these two clusters.
    d. Create a single array of each of the X arrays and Y arrays in an X,Y,X,Y pattern.

39. Which of the following terminals controls how many times a For Loop will execute?
    a.
    b.
    c.
    d.

40. What is the value in **after substring** upon completion of the following code?
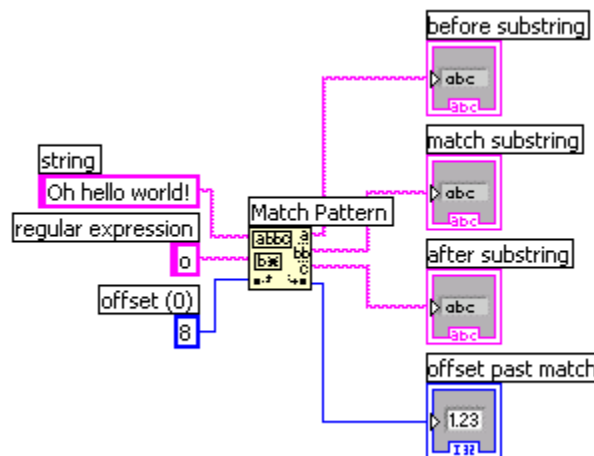
a. world!
b. rld!
c. h hello world!
d. <blank>

Answers Page:

Below are the answers and links to additional resources for the CLAD Sample Exam. To quickly check your answers, record them on the Answer Sheet, detach the Answer Sheet, and compare it, side-by side, with the answer columns on this page.

This answer page is not included in the actual CLAD exam; it is included here for practice purposes only.

Question	Answer	Resources on Topic
1	B	Debugging Tips and Tricks
2	B	Arrays and Clusters
3	B	Data Flow, Debugging, and SubVIs
4	A	Arrays and Clusters
5	B	Using the Probe Tool
6	C	Arrays and Clusters , Feedback Node
7	A	Replace SubString Function
8	D	Configuring String Controls and Indicators
9	C	Array Subset Function
10	A	Array Size Function
11	B	Arrays and Clusters
12	C	Different Methods for Manipulating XY Graph
13	B	XY Graph Express VI
14	D	Video: Timing, Shift Registers, and Case Structures
15	C	For Loops and While Loop Structures
16	B	Arrays and Clusters
17	A	Tutorial: For Loops and While Loops , Different Wiring Tunnels with For Loops and While Loops in LabVIEW
18	C	Average Last Five Values
19	B	Exercise: Arrays and Clusters
20	C	Module 3: Loops , Different Wiring Tunnels with For Loops and While Loops in LabVIEW
21	E	How Does LabVIEW Round and Coerce Values?
22	A	Array Max & Min Function
23	A	What Is the Difference Between Graphs and Charts in LabVIEW?
24	D	Waveform Chart Does Not Show Multiple Plots in the Display
25	D	Tutorial: Debugging Tips and Tricks
26	D	Custom Error Handling In LabVIEW
27	C	Application Design Patterns: State Machines
28	B	Tutorial: Debugging Tips and Tricks
29	D	Variant Data in LabVIEW -- Mastering a Higher-Level Way to Work with Data
30	A	Tutorial: Timing, Shift Registers, and Case Structures
31	D	Error List Window
32	B	Managing Breakpoints
33	D	Tutorial: Arrays and Clusters

34	B	Exclusive Or Function
35	B	Tutorial: Arrays and Clusters
36	D	Managing Large Datasets within LabVIEW
37	B	Chart Update Modes in LabVIEW and Measurement Studio
38	B	Tutorial: Arrays and Clusters
39	D	Tutorial: For Loops and While Loops
40	B	Match Pattern Function