

الفصل : السادس

التخصص : تحكم

التثناء الموافق : 2022-3-29م

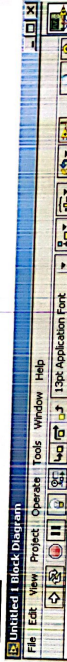
(LabVIEW) الامتحان النهائي لمادة البرمجة الرسومية

.....: رقم القيد:

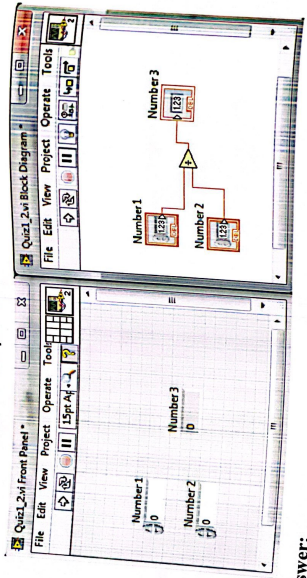
.....: الاسم:

Q1) write a LabVIEW program that calculates the factorial of the number 5, in the following block diagram?

Answer:



Q2) you want to use the VI below (front panel and block diagram shown) as a SubVI inside a different VI to divide two numbers and return the result, but you are unable to. Why? How can you fix it?



Answer:

Q3) Digital controller described by the following difference equation:

$$y(n) = 5y(n-1) - 3y(n-2) + u(n)$$

Where: $y(n)$ is the controller output & $u(n)$ is the controller input.

Therefore, by using back-shift operator (Z^{-1}), draw the difference equation of the controller on the following block diagram of the LabVIEW application?

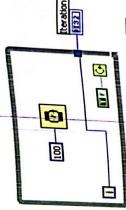
ANSWER:



1. Can a wire be used to pass data between loops that are intended to run in parallel?

- a. Yes
- b. No

2. Which of the followings statements is true about the following block diagram?



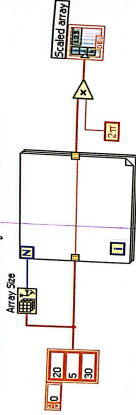
- a. The loop will execute once and the iteration terminal, **1**, will output a value of one
- b. The loop will execute once and the iteration terminal, **1**, will output a value of zero
- c. The loop will execute infinitely and the program will have to be aborted
- d. The loop will not execute and the iteration terminal, **1**, will output return a null value

3. What is the output of the Initialize Array function after the following code has executed?



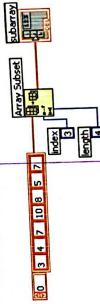
- A) 1-D Array of {3, 3, 3, 3}
- B) 1-D Array of {4, 4, 4}
- C) 1-D Array of {3, 4}
- D) 1-D Array of {4, 3}

4. What is the result of Scaled array after execution?



- A) 1-D Array of {80, 20, 40, 10, -60}
- B) 1-D Array of {120, 30, -60}
- C) 1-D Array of {125, 66, 31, 42, 188, 50}
- D) 2-D Array of {{120, 90, 20}, {60, 30, -40}}

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



- A) a 1-D Array of {8, 5, 7}
- B) لا شيء مما ذكر
- C) a 1-D Array of {10, 8, 5, 6}
- D) a 1-D Array of {7, 10, 8, 5}

6. if a concatenate inputs was selected in build array shown below, what is the result in appended array indicator?

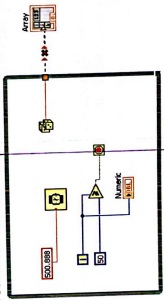


- A) a 1-D Array of {10, 12, 13, 7, 25, 15}
- B) a 1-D Array of {10, 12, 13, 15, 7, 25}
- C) 2-D Array of {{10, 12, 13}, {15, 25, 7}}
- D) None of the above

7. 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 the item.

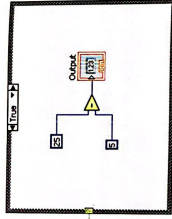
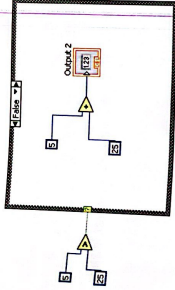
- A) Shift
- B) Alt
- C) Ctrl-Shift
- D) Ctrl
- E) الإختيار A و C صحيحان
- F) لا شيء مما ذكر

8. The following code has an error in the error list, the cause of error is:



- A) The wait (ms) is connected to floating number
 B) The array is connected to single value
 C) Use different data types
 D) The auto-index property inactivated
 E) صحیحان A و D
 F) لاشیء مما ذکر

9. What value does the Numeric indicator display after this code executes?



- A) 30
 B) 20
 C) -20
 D) 15
 E) صحیحان C و D
 F) لاشیء مما ذکر

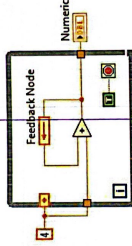
10. Which data type is not accepted by the case selector terminal on a case structure?

- A) Arrays
 B) Enumerated type values
 C) Strings
 D) Integers
 E) صحیحان A و D
 F) لاشیء مما ذکر

11. The Wait Until Next ms Multiple function:

- A) Begins timing at program start and completes upon a multiple of the PC timer
 B) Begins timing after the code in the loop has completed and expires when the multiple of the (user) input time expires
 C) Begins timing after the code in the loop has completed and expires when the (user) input time completes
 D) Begins timing at program start and waits until the code in the loop has completed
 E) صحیحان A و D
 F) لاشیء مما ذکر

12. What value does the Numeric indicator display after this code executes?



A) 0	B) 4
C) 8	D) The While Loop iterates indefinitely
E) لا يتغير	F) لا يتغير مما لا يغير

13. Which equation is equivalent to the code?



- a) $x = \sqrt{a \times ((a + b)^2 - (c - 1))}$
- b) $x = \sqrt{a \times ((c - 1) - (a + b)^2)}$
- c) $x = \sqrt{a \times ((a + b^2) - (c - 1))}$
- d) $x = \sqrt{a^2 \times ((a + b)^2 - (c - 1))}$

14. Which of the following statements is FALSE?

- a) A SubVI connector pane defines where to wire inputs and outputs
- b) The color of a SubVI connector pane terminal matches the data type it is connected to
- c) You must have an icon/connector pane to use a SubVI
- d) A SubVI icon can be edited from the functions palette