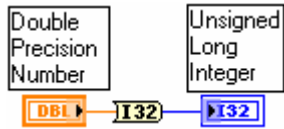1. For a machine control application, the most appropriate choice for the mechanical action of a STOP button would be:
   a. Switch when pressed.
   b. Latch when pressed.
   c. Switch when released.
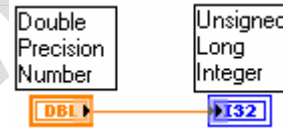   d. Latch when released.
   e. Switch until released.

2. For Windows based dialogs and UIs, the most appropriate choice for the mechanical action of a STOP button would be:
   a. Switch when pressed.
   b. Latch when pressed.
   c. Switch when released.
   d. Latch when released.
   e. Switch until released.

3. A SubVI's code would be loaded in memory if it has been set up to show its front panel when called and the main VI is opened.
   a. True.
   b. False.

4. Which of the following code snippets is more efficient in terms of memory usage?
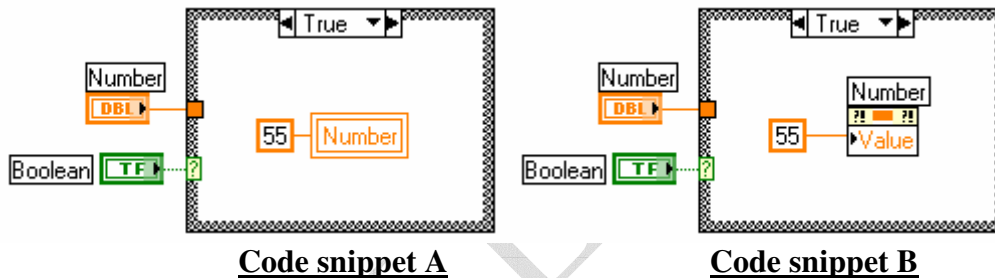


**Code snippet A**
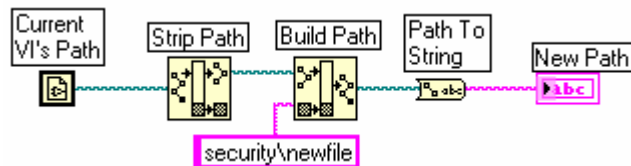
**Code snippet B**
(Note coercion dot on I32 terminal)

   a. Code snippet A.
   b. Code snippet B.

5. If an array must be built dynamically in a For Loop, the most appropriate method is to:
   a. Accumulate the array on a loop boundary in a shift register.
   b. Dynamically resize the array on every loop iteration using array functions.
   c. Accumulate the array (by auto-indexing) on the loop boundary in a tunnel.
   d. Pre-allocate the array and populate it in the loop.

6.  Two code segments in a VI each require the same two DAQ resources (resource A and resource B) to continue.  One acquires resource A, and the other acquires resource B, and they hold these resources waiting for the other to become free. This situation is known as:
    a.  Thread starvation.
    b.  A memory leak.
    c.  Deadlock.
    d.  Priority inversion.

7.  A single property node executes properties in:
    a.  Data flow order.
    b.  Top-down order.
    c.  Object-oriented order.
    d.  Bottom-up order .

8.  Which of the following code snippets would execute faster?



**Code snippet A**          **Code snippet B**

    a.  Code snippet A.
    b.  Code snippet B.

9.  The color of  the Call Library Function Node indicates:
    a.  Whether the function uses the C calling convention or the Stdcall (WINAPI) calling convention.
    b.  Whether the function is thread-safe or thread-unsafe.
    c.  Whether the function is executable.
    d.  Whether the function is reentrant.

10. To call an ActiveX method, you must use:
    a.  Property Node.
    b.  Invoke Node.
    c.  Call Library Function Node.
    d.  Call ActiveX Dll Node.

11. You need to build a calculator VI in which 10 complex computations (each in a separate SubVI) have to be performed. Which approach would you take in designing your calculator based solely on memory optimization?
   a. Use a VI Server Call by Reference Node to call the SubVI.
   b. Use a Polymorphic VI.
   c. Use a Case Structure to call the appropriate SubVI.
   d. Use a VI Server to open a reference to a Polymorphic VI.

12. To prevent race conditions, access to a global variable can be limited by a:
   a. Notifier.
   b. Semaphore.
   c. Rendezvous.
   d. Occurrence.

13. A Notifier is similar to a Queue, except it has only one element and the existing data is overwritten when a new element is queued.
   a. True.
   b. False.

14. If the Current VI's Path is: C:\Program Files\National Instruments\LabVIEW 7.0\examples\file.vi, what will the New Path indicator contain even if a folder named security does not exist on the disk?



   a. <Not A Path>
   b. C:\Program Files\National Instruments\LabVIEW 7.0\examples\security\newfile
   c. C:\security\newfile
   d. \\security\newfile

More than one answer *may* be correct for these questions. Circle *ALL* of the correct answers for full credit:

15. For which of the following reasons can global variables be a major source of errors in a LabVIEW program? (check all that apply for credit)
   a. Contributes to race conditions.
   b. Breaks Data flow.
   c. Difficult to debug.
   d. Cannot be locked with a semaphore.