Section 3.1 Numbers

1. What is the correct statement when declaring and assigning the value of 100 to an Integer variable called numPeople?
   (A) Dim numPeople = 100
   (B) Dim numPeople = Int(100)
   (C) numPeople = 100
   (D) Dim numPeople As Integer = 100
   D

2. What is the value of Int(8.9)?
   (A) 8
   (B) 8.9
   (C) 9
   (D) 1
   A

3. The type of error that is normally spotted by the Code Editor is:
   (A) runtime
   (B) logic
   (C) syntax
   (D) user
   C

4. Which of the following arithmetic operations has the highest level of precedence?
   (A) +-  
   (B) */
   (C) ^
   (D) ()
   D

5. Which of the following statements removes all text from lstBox?
   (A) lstBox.Clear()
   (B) lstBox.Items.Clear()
   (C) lstBox.Text.Clear()
   (D) lstBox.Items.Add("")
   B
6. What will be the contents of the variable \(x\) after the following statement is executed?

\[
x = \text{Math.Sqrt}(((9 + 7) / (4 * 2)) + 2)
\]

(A) 1  
(B) 2  
(C) 3  
(D) 4  
(E) None of the above

B

7. Suppose the Double variable \(num\) has the value 123.4567. What value will the following statement assign to \(num\)?

\[
um = \text{Math.Round}(num, 2)
\]

(A) 123.4567  
(B) 123.457  
(C) 123.45  
(D) 123.46  

D

8. What value will be assigned to the numeric variable \(x\) when the following statement is executed?

\[
x = 2 + 3 \times 4
\]

(A) 20  
(B) 14  
(C) 92  
(D) 234  

B

9. Which of the following statements declare the variables \(a\) and \(b\) as type Integer?

(A) \(a = 0: b = 0\)  
(B) \(\text{Dim } a, b\)  
(C) \(\text{Dim } a \& b \text{ As Integer}\)  
(D) \(\text{Dim } a, b \text{ As Integer}\)  

D
10. Assume that \( x \), \( y \), and \( temp \) are Integer variables. Which of the following lines of code swaps the values of \( x \) and \( y \)?

(A) \( x = y \)
\( y = x \)

(B) \( x = temp \)
\( x = y \)
\( y = temp \)

(C) \( temp = x \)
\( x = y \)
\( y = temp \)

(D) \( x = y \)
\( temp = x \)
\( y = temp \)

C

11. Which of the following is a valid name for a variable?

(A) Two_One
(B) 2One
(C) Two One
(D) Two.One

A

12. Given \( x = 3 \) and \( y = 1 \), what value will be assigned to the Double variable \( w \) when the following statement is executed?

\[ w = \frac{x + y}{x - y} \]

(A) 1
(B) 2
(C) 3
(D) None of the above

B

13. What will be displayed when the following lines are executed?

\[
\begin{align*}
\text{Dim } x \text{ As Double } &= 3, \text{ y As Double } = 1 \\
\text{Dim } z \text{ As Double} \\
z &= x + (y \times x) \\
x &= y \\
z &= x + z \\
listBox.Items.Add(x + y + z)
\end{align*}
\]

(A) 4
(B) 9
(C) 10
(D) None of the above

B
14. Which of the following is the same as $2^3$?
   (A) $2 \times 2 \times 2$
   (B) $2 \times 3$
   (C) $2 + 2 + 2$
   (D) $3 \times 3$
   A

15. Which of the numbers below is equivalent to 0.000017489?
   (A) $1.7489 \times 10^5$
   (B) $17489 \times 10^6$
   (C) $1.7489 \times 10^{-6}$
   (D) $1.7489 \times 10^{-5}$
   D

16. Keywords in Visual Basic are words that
   (A) should be used when naming variables.
   (B) are used to name controls, such as TextBox1, Command2, etc.
   (C) have special meaning and should not be used when naming variables.
   (D) are used as prefixes for control names (such as `txt`, `btn`, `lbl`, and `lst`).
   C

17. When declaring a variable that will refer to a submarine, a good name for the variable is `sub`. (T/F)
   F

18. The function Math.Int will always round mixed numbers down to the next lowest integer. (T/F)
   T

19. When using the equal sign to assign values, the variable on the left hand side of the equal sign will always receive the value. (T/F)
   T

20. The variables `firstName` and `firstNAME` are identical. (T/F)
   T

21. The following statement assigns 6 times the value of `y` to `x`. (T/F)
   \[ x = 6y \]
   F

22. The following statement is valid. (T/F)
   \[ y = y + 72 \]
   T

23. A numeric variable that has not been assigned a value has the default value zero. (T/F)
   T
24. The following statement is valid. (T/F)
   \[ \text{Dim } x \text{ As Double } = 3,542.36 \]
   F

25. The statement \( a + b = c \) assigns to \( c \) the sum of the values of \( a \) and \( b \). (T/F)
   F

26. The exponential notation used in Visual Basic is exactly the same as standard mathematical notation. (T/F)
   F

27. The `ListBox.Items.Clear()` statement is used to empty the contents of a list box. (T/F)
   T

28. Visual Basic always displays numbers in decimal format. (T/F)
   T

29. An assignment statement is used to assign a value to a variable or property. (T/F)
   T

30. You can use a variable name in almost any place you could use a literal value. (T/F)
   T

31. Numeric variables can be initialized to zero or any other number, but once they are initialized, they cannot be changed. (T/F)
   F

32. The following two statements are equivalent. (T/F)
   \[ \text{var1 = var2} \]
   \[ \text{var2 = var1} \]
   F

33. The value of \((11 \text{ Mod } 2)\) is 1. (T/F)
   T

34. The value of \((11 \div 2)\) is 1. (T/F)
   F

35. The following two statements are equivalent, where `numVar` is a numeric variable. (T/F)
   \[ \text{numVar} = \text{numVar} + 1 \]
   \[ \text{numVar} += 1 \]
   T

36. What is the value of `numVar` after the following three statements are executed?
   \[ \text{Dim numVar As Integer } = 5 \]
   \[ \text{numVar} = \text{numVar} + 2 \]
   \[ \text{numVar} += 3 \]
   10
Section 3.2 Strings

1. Which of the following statements is a valid assignment statement?
   (A) txtBox = "Hello World"
   (B) "Hello World" = txtBox.Text
   (C) txtBox.Text = "Hello World"
   (D) Text.txtBox = "Hello World"
      C

2. What is the correct syntax for displaying the value of the String variable myString in a text box?
   (A) txtBox.Text = "myString"
   (B) txtBox.Text = myString
   (C) txtBox.Text.myString
   (D) txtBox.Text = Str(myString)
      B

3. Which of the following code statements generates an error?
   (A) txtFirst.Text = "Hello"
   (B) txtFirst.Text = Hello
   (C) txtFirst.Text = "My Text"
   (D) txtFirst.Text = Me.Text
      B

4. Which of the following statements will NOT display the number 5 in the text box?
   (A) txtBox.Text = 5
   (B) txtBox.Text = "5"
   (C) txtBox.Text = CStr("5")
   (D) txtBox.Text = CStr(5)
      A

5. Which statement will display the words “Hello World” in a text box?
   (A) txtBox.Text = Hello & World
   (B) txtBox.Text = "Hello " & World
   (C) txtBox.Text = Hello & " World"
   (D) txtBox.Text = "Hello" & " World"
      D
6. Which of the following expressions has as its value the value of strVar with its leading and trailing spaces removed?

(A) strVar.Length
(B) strVar.ToUpper
(C) strVar.Trim
(D) strVar.Trim

D

7. Which statement can be used to clear the contents of a text box?

(A) txtBox.Empty = True
(B) txtBox = ""
(C) txtBox.Text = ""
(D) txtBox.Wipe()

C

8. What character is used to signify the beginning of a comment statement?

(A) asterisk
(B) exclamation mark
(C) apostrophe
(D) backslash

C

9. The joining of two strings together to form a new string is called

(A) concatenation.
(B) addition.
(C) compaction.
(D) substrings.

A

10. Given the data assigned to the string variable str2 shown below, which of the following statements will assign the value ALL to the string variable str1?

str2 = "WHEN ALL ELSE FAILS, READ THE DIRECTIONS"

(A) str1 = str2.Substring(5)
(B) str1 = str2.IndexOfStr("ALL")
(C) str1 = str2.Substring(6, 3)
(D) str1 = str2.Substring(5, 3)

D
11. What will be the output of the following statement?

```
txtBox.Text = CStr(Math.Round(17 / 2))
```

(A) 8 
(B) 9 
(C) 8.5 
(D) 17.00 
A

12. What will be the output of the following lines?

```
Dim alphabet, soup As String
alphabet = "abcdefghijklmnopqrstuvwxyz"
soup = alphabet.ToUpper
txtBox.Text = alphabet.Substring(0, 5) & soup.Substring(0, 5)
```

(A) abcdeABCDE 
(B) ABCDEABCDE 
(C) eE 
(D) EE 
A

13. What is the value of "12/15/09".Substring(3,2)?

(A) /15 
(B) 15 
(C) /15/ 
(D) 12/15/09 
B

14. What will be the value of numVar when the following code is executed?

```
Dim strVar As String, numVar As Integer
strVar = "Now is the time for all good men"
umVar = strVar.IndexOf("the time for")
```

(A) "Now is all good men" 
(B) "12" 
(C) 7 
(D) 8 
C
15. What will be displayed when the following lines are executed?

```vbc
Dim a, b, c As String
a = "THE WHOLE"
b = "PART"
c = a.Substring(CInt(Math.Sqrt(4)), b.Length)
txtBox.Text = CStr(c)
```

(A) THE WHOLE PART
(B) 6
(C) E WH
(D) HE W

C

16. What will be displayed when the following lines are executed?

```vbc
Dim x As Double = 2
'x = 3
txtBox.Text = CStr(x)
```

(A) 3
(B) 0
(C) 2
(D) None of the above

C

17. The symbol for the string concatenation operator is

(A) @
(B) &
(C) %
(D) #

B

18. What will be the output of the following line?

```vbc
txtBox.Text = "2" & 3
```

(A) 23
(B) 2 3
(C) 5
(D) Syntax error

A

19. The following statement contains what type of error?

```vbc
txtAverage.Txt = CStr(CDb1(txtNum1.Text) + CDb1(txtNum2.Text) / 2)
```

(A) a syntax error only
(B) a logic error only
(C) both a syntax error and a logic error
(D) no errors

C
20. Which of the following expressions will yield the string "John Doe", where name1 = "John Blake" and name2 = "Janet Doe"?

(A) name1.Substring(0, 4) & name2.Substring(6, 8)
(B) name1.Substring(0, 4) & name2.Substring(0, 3)
(C) name1.Substring(0, 5) & name2.Substring(6, 3)
(D) None of the above

21. If strVar.Length is 5, then the value of strVar.Substring(4, 1) is the last character of the value of strVar. (T/F)

22. The value of strVar.Length is the number of characters in the value of strVar. (T/F)

23. The following lines are valid. (T/F)
    Dim h As String = "Hello"
    txtBox.Text = CStr(h.IndexOf("h"))
    T

24. All comment statements must be placed at the beginning of a program. (T/F)

25. The statement lstBox.Items.Add("") clears all the text from the list box. (T/F)

26. The statement txtBox = "Hello" is an example of a syntax error. (T/F)

27. The following statements assign the lowercase letters to the string variable alphabet. (T/F)
    Dim alphabet As String
    alphabet = abcdefghijklmnopqrstuvwxyz
    F

28. The following statement is valid where dog and cat are variables of the same type. (T/F)
    dog = cat
    T

29. Option Explicit requires you to declare every variable before its use. (T/F)
    T

30. With Option Strict On, a statement of the form intVar = dblVar is not valid. (T/F)
    T
31. A statement of the form `dblVar = intVar` is a narrowing assignment statement. (T/F)  
   F

32. An assignment statement of the form `intVar = 8 / 4` is not valid. (T/F)  
   T

33. After the statement `textbox.Text = ""` is executed, the text box will be clear and the cursor will appear inside the text box. (T/F)  
   F

34. A string literal is a sequence of characters that is treated as a single entity. (T/F)  
   T

35. When declaring a variable of type `String`, you must specify a length for the string. (T/F)  
   F

36. Type casting is used to convert a value to a different data type. (T/F)  
   T

37. The Trim method is used to remove all blank space before and after a string. (T/F)  
   T

38. The Substring method is used to extract a portion of a string. (T/F)  
   T

39. The empty string is the same as a string that contains one space. (T/F)  
   F

40. A variable declared inside an event procedure is said to have local scope. (T/F)  
   T

41. A variable declared outside of an event procedure is said to have class-level scope. (T/F)  
   T

42. A variable declared inside an event procedure cannot have the same name as a variable declared inside another procedure. (T/F)  
   F

43. When a variable declared in one event procedure has the same name as a variable declared in another event procedure, any change to the value of one of the variables will affect the value of the other variable. (T/F)  
   F

44. Write a statement that assigns the first character of the value of `strVar1` to `strVar2`.  
   `strVar2 = strVar1.Substring(0, 1)`

45. Write a statement that assigns the last character of the value of `strVar1` to `strVar2`.  
   `strVar2 = strVar1.Substring(strVar1.Length - 1, 1)`
Section 3.3 Input and Output

1. What is the proper syntax when using a message dialog box?
   (A) `MessageBox.Show("Hi there", "Hi")`
   (B) `MessageBox.Show(Hi there, Hi)`
   (C) `MessageBox.Show "Hi There", "Hi"
   (D) `MessageBox.Show Hi There, Hi`

2. Which of the following is not used to assign a value to a variable?
   (A) `InputBox` statement
   (B) `Dim` statement
   (C) an assignment statement
   (D) `MessageBox.Show` statement

3. Which statement prompts the user for a name and then assigns the name to the string variable `strName`?
   (A) `strName = InputBox("What is your first name?", "First Name")`
   (B) `strName = MessageBox.Show("What is your first name?", "First Name")`
   (C) `InputBox("What is your first name?", "First Name") = strName`
   (D) `MessageBox.Show "What is your first name?", "First Name" = strName`

4. Suppose you are 20 years old, `num` is an integer variable, and the statement
   `num = 1 + CInt(InputBox("How old are you?"))`
   is executed and responded to? What will be the output of
   `txtBox.Text = num & " years old"`
   (A) `1 + "How old are you?"
   (B) Syntax error
   (C) `20 years old`
   (D) `21 years old`

5. What message will be displayed by the following statement:
   `MessageBox.Show("This is a test.", "Test")`
   (A) This is a test.
   (B) Nothing.
   (C) Test
   (D) This is a test. Test
6. What is displayed in the title bar of the message dialog box by the following statement?

   `MessageBox.Show("This is a test.", "Test")`

   (A) This is a test.
   (B) Nothing.
   (C) Test
   (D) The same as the name of the program.

   C

7. What will be the output of the following statement?

   `txtBox.Text = (1234.567).ToString("C")`

   (A) $1234.567
   (B) 1,234.57
   (C) $1234.57
   (D) $1,234.57

   D

8. What will be the output of the following statement?

   `txtBox.Text = (1234.5689).ToString("N3")`

   (A) 1234.568
   (B) 1230
   (C) 1,234.568
   (D) 1,230

   C

9. What will be the output of the following statement?

   `txtBox.Text = (2/3).ToString("P4")`

   (A) 0.6666
   (B) 0.6667
   (C) 66.66%
   (D) 66.6667%

   D

10. Which of the following masks is appropriate for a masked text box into which the user will enter a license plate consisting of two digits followed by 4 letters?

    (A) &&LLLL
    (B) &&&&&&
    (C) 00LLLL
    (D) None of the above

    C

11. The value of (12345).ToString("C") is $12,345.00. (T/F)

    T
12. The value returned by InputBox is a string. (T/F)  
   T

13. The line continuation character must be preceded with a space. (T/F)  
   T

14. When the Mask property of a masked text box is set to LL, at most two characters  
   (consisting of letters or spaces) can be entered into the masked text box. (T/F)  
   T

15. Write a statement that produces a message dialog box with the words "US Motto" in its title  
   bar and the message "E PLURIBUS UNUM".  
   MessageBox.Show("E PLURIBUS UNUM", "US Motto")

16. If \textit{TAX\_RATE} is a named constant of type Double, which of the following statements is  
   valid?  
   (A) \texttt{TAX\_RATE += 1}  
   (B) \texttt{dblVar = TAX\_RATE + 1}  
   (C) \texttt{TAX\_RATE = 2 * TAX\_RATE}  
   (D) All of the above  
   B

17. Which statement assigns the date of the first day of the year 2014 to the Date variable  
   \textit{firstDay}?  
   (A) \texttt{firstDay = 1/1/2014}  
   (B) \texttt{firstDay = "1/1/2014"}  
   (C) \texttt{firstDay = &1/1/2014&}  
   (D) \texttt{firstDay = #1/1/2014#}  
   D

18. The value of \texttt{(#1/1/2014#).ToString("D")} is  
   (A) 01/01/2014  
   (B) January 1, 2014  
   (C) January 01, 2014  
   (D) Sunday, January 1, 2014  
   D

19. Which statement assigns today's date to the Date variable \textit{currently}?  
   (A) \texttt{currently = #Now#}  
   (B) \texttt{currently = #Today#}  
   (C) \texttt{currently = Now}  
   (D) \texttt{currently = Today}  
   D
20. If the value of the Date variable currently is the first day of 2011, then what is displayed by
the statement `txtBox.Text = CStr(currently.AddMonths(1))`?
   (A) 1/2/2011
   (B) 2/1/2011
   (C) February 1, 2011
   (D) Tuesday February 1, 2011
   B

21. Named constants must have class-level scope. (T/F)
   F

22. The value assigned to a class-level named constant can be changed in any procedure. (T/F)
   F

23. The statement `Const TAX_RATE As Double` is not valid. (T/F)
   T

24. The value of `DateDiff(DateInterval.Day, #1/1/2014#, #2/1/2014#)` is 31. (T/F)
   T