Select theletter of the most appropriate answer and shade in the corresponding region on the answer sheet. If no answer seems appropriate then shade in region E on the answer sheet.

1) The purpose of an algorithm is to _____.
    A) list the elements needed for the user interface
    B) analyze the nature of a problem
    C) understand what a programming language does
    D) describe a set of steps to solve a problem

2) _____ simplify the process of writing instructions that can be translated to machine language.
    A) Programming languages   B) Output devices
    C) Graphical user interfaces   D) Variables

3) A word that has a specific, predefined meaning in a programming language is called _____.
    A) a variable   B) a keyword   C) a comment   D) an operator

4) Programs should use comments (remarks) to _____.
    A) help human readers understand the program   B) make the program smaller in size
    C) make a program run more efficiently   D) make the code run faster

5) Flowcharts are used to _____.
    A) check for syntax errors   B) graphically depict the control flow in a method
    C) describe the programs input and output   D) determine the controls required for a program

6) Which one of the following statements is true about a variable?
    A) It is a storage location in memory represented by a name
    B) It is a key element of the graphical user interface
    C) It performs various operations on data
    D) It is a set of programming statements to perform a specific task

7) Why is it necessary to run a program using test data for input?
    A) To verify there are no syntax errors in the program.
    B) To verify the application produces correct results.
    C) To verify that programming language elements are used correctly.
    D) To see if the flowchart is correct.

8) Which of the following is an example of a binary number?
    A) 123   B) 202   C) 324   D) 1010

9) The part of a program that users see and interact with is known as the _____.
    A) methods   B) user interface   C) properties   D) algorithm

10) The purpose of a compiler is to _____.
    A) aid the programmer in commenting he/her code
    B) convert a program from a programming language to machine code
    C) assemble and package the documentation for an application
    D) aid the programmer in developing GUIs.

11) Syntax errors _____.
    A) are not syntax errors
    B) are errors such as misspelled keywords or incorrect use of operators
    C) are errors found while an application is running
    D) result from an attempt to perform an operation that cannot execute

12) What is the result after evaluating the following expression: `24 MOD 9`
    A) 6   B) 5   C) 2   D) 3

13) A Boolean type variable can hold only one of two possible values: _____.
    A) -1 or +1   B) 0 or 1   C) `A or B`   D) *True* or *False*

14) Which of the following has the highest order of precedence in arithmetic expressions?
    A) Multiplication and division
    B) Exponentiation (the ^ operator)
    C) Addition and subtraction
    D) None of the above; calculations are always evaluated from left to right.

15) What will be the value of `intAnswer` after execution of these statements?

```
Const intNumA As Integer = 6
Const intNumB As Integer = 2
intAnswer = intNumA / intNumB + intNumA * intNumB
```

    A) 18   B) 16   C) 15   D) 12

16) What is the value of `intE` after the following statements execute?

```
Dim intC As Integer
Dim intD As Integer
Dim intE As Integer
intC = 20
intD = 3
intE = intC \ intD
```

    A) 6.666667   B) 0   C) 7   D) 6

17) What is the value of `dblOutcome` after the following section of code executes?

```
Dim dblA as Double
Dim dblB as Double
Dim dblC as Double
Dim dblOutcome as Double
dblA = 45
dblB = 30
dblC = 3 * dblA / dblB
dblOutcome = 2 * (dblC + 15)
```

    A) 0   B) 24   C) 80   D) 39

18) Which of the following code segments assigns the string "Great Year" to the Text property of a label named lblMessage when the value in the variable decSales is either greater than 50,000 or equal to 50,000?

A)
```
If decSales >= 50000 Then
    blMessage.Text = "Great Year"
End If
```

B)
```
If decSales < 50000 Then
    lblMessage.Text = "Great Year"
End If
```

C)
```
If decSales > 50000 Then
    lblMessage.Text = "Great Year"
End If
```

D)
```
If decSales <= 50000 Then
    lblMessage.Text = "Great Year"
End If
```

19) Suppose you want to determine whether a variable, decPayAmount, is between 1200 and 1400, inclusively. If it is, you want to set lblMessage text to "Pay amount is in the range". Which of the following code segments will accomplish this?

A)
```
If decPayAmount > 1200 Or decPayAmount < 1400 Then
    lblMessage.Text = "Pay amount is in the range"
End If
```

B)
```
If decPayAmount <= 1200 And decPayAmount>= 1400 Then
    lblMessage.Text = "Pay amount is in the range"
End If
```

C)
```
If decPayAmount >=1200 And decPayAmount <=1400 then
    lblMessage.Text = "Pay amount is in the range"
End If
```

D)
```
If decPayAmount <=1200 Or decPayAmount >= 1400 Then
    lblMessage.Text = "Pay amount is in the range"
End If
```

20) What value is assigned to decTaxes by the following program segment, assuming that the user enters 50000 into the textbox txtSalary.Text?

```
Dim decSalary, decTaxes As Decimal
decSalary = CDec (txtSalary.Text)
If decSalary > 50000 Then
   decTaxes = .40 * decSalary
ElseIf decSalary > 40000 Then
   decTaxes = .30 * decSalary
ElseIf decSalary > 30000 Then
   decTaxes = .20 * decSalary
Else
   decTaxes = .10 * decSalary
End If
```

A) 15000   B) 10000   C) 5000   D) 20000

21) If the Boolean expression A is *True* and B is *False*, the value of the logical expression A And B is _____.
   A) True   B) False   C) 1   D) 0

22) If the Boolean expression A is *True* and B is *False*, the value of the logical expression A Or B is _____.
   A) True   B) False   C) 1   D) 0

23) What is assigned to lblMessage.Text when the following code segment executes?

```
Dim strName1 As String = "Jim"
Dim strName2 As String = "John"
If strName1 > strName2 Then
    lblMessage.Text = "Jim is greater"
Else
    lblMessage.Text = "John is greater"
End If
```

A) Jim is greater   B) John is greater   C) True   D) False

24) Which of the following operators takes a Boolean expression and reverses its logical value?
A) Not   B) <>   C) Xor   D) And

25) What value will be assigned to strGrade when intScore equals 90?

```
If intScore > 60 Then
    strGrade = "D"
End If
If intScore > 70 Then
    strGrade = "C"
End If
If intScore > 80 Then
    strGrade = "B"
End If
If intScore > 90 Then
    strGrade = "A"
End If
```

A) A   B) B   C) C   D) D

26) In the following statement that begins a For...Next loop, what is the purpose of the Step clause?

```
For intX = 1 to 100 Step 5
```

A) It causes intX to be initialized to 5 when the loop begins.
B) It causes intX to be incremented by 5 each time the loop repeats.
C) It causes intX to be decremented by 5 each time the loop repeats.
D) It causes the loop to end when intX is equal to 5.

27) What is the difference in the execution of the `Do Until Loop` (first example) and the `Do Loop Until` (second example)?

```
' First Example
sngPayAmount = 200
Do Until sngPayAmount > 150
    sngPayAmount = sngPayAmount — 50
Loop

'Second Example
sngPayAmount = 200
Do
    sngPayAmount = sngPayAmount — 50
Loop Until sngPayAmount > 150
```

    A) The first loop will execute one more time than the second loop.
    B) The first loop will never be executed while the second is an infinite loop.
    C) Both loops are executed in an identical manner.
    D) The first loop will never be executed while the second loop will execute once.

28) What is wrong with the following code?

```
Dim intIndex As Integer
For intIndex = 5 To 1
    ListBox.Items.Add(intIndex.ToString)
Next
```

    A) You need to specify a negative step value in order to execute this loop.
    B) A `For Next` loop cannot be used to count backward.
    C) The Next statement must read `Next intIndex`.
    D) `intIndex` is declared incorrectly for use with this type of loop.

29) Which type of loop repeats as long as its loop condition remains *True*?
    A) `Do Next`   B) `Do While`   C) `Do Until`   D) all of the above

30) Which statement is True in regard to the following code?

```
intCount = 0
Do While intCount < 10
    lstOutput.Items.Add("Good Job")
Loop
```

    A) The `Items.Insert` method should be used instead of `Items.Add`.
    B) This is an infinite loop.
    C) `intCount` should start at -1.
    D) The text *Good Job* should not have quotation marks around it.

31) Which of the following code fragments calculates the average of 5 numbers input with an input box, and displays the result in lblResult?

A)
```
intCount = 0
intSum = 0
Do While intCount <= 5
    intValue = CInt(InputBox("enter a number"))
    intSum = intSum + intValue
    intCount += 1
Loop
sngAvg = intSum / intCount
lblResult.Text = sngAvg.ToString()
```

B)
```
intCount = 0
intSum = 0
Do While intCount <=5
    intValue = CInt(InputBox("enter a number"))
    intSum = intSum + intValue
Loop
sngAvg = intSum / intCount
lblResult.Text = sngAvg.ToString()
```

C)
```
intCount = 0
intSum = 0
Do While intCount < 5
    intValue = CInt(InputBox("enter a number"))
    intSum = += intValue
    intCount += 1
Loop
sngAvg = intSum / intCount
lblResult.Text = sngAvg.ToString()
```

D)
```
intCount = 5
intSum = 0
Do While intCount = 5
    intSum = CInt(InputBox("enter a number"))
    sngAvg = intSum / intCount
    lblResult.Text = sngAvg.ToString()
Loop
```

32) How many times will the message *I love Visual Basic* be displayed?

```
Dim intCount As Integer = 0
Do
    lstOutPut.Items.Add("I love Visual Basic")
        intCount += 1
Loop While intCount > 10
```

A) It will display 2 times.   B) It will display 10 times.
C) It will display once.   D) It will not be displayed at all.

33) What will be the final value of intCount?

```
Dim intCount As Integer = 3
Do
    intCount += 6
Loop While intCount < 20
```

   A) 20   B) 21   C) 9   D) 15

34) Which of the following code examples is a function that will accept three integer parameters, calculate their average, and return the result?

A)
```
Function Average(ByVal intX As Integer, ByVal intY as Integer, _
  ByVal intZ As Integer) As Single

  Average = intX + intY + intZ / 3
  Return Average
End Function
```

B)
```
Function Average(ByVal intX As Integer, ByVal intY As Integer, _
  ByVal intZ As Integer) As Single

  Average = (intX + intY + intZ) / 3
End Function
```

C)
```
Function Average(ByRef intX As Integer, ByRef intY as Integer, _
     ByRef intZ As Integer, ByRef Average As Double)

  Average = (intX + intY + intZ) / 3
End Function
```

D)
```
Function Average(ByVal intX As Integer, ByVal IntY as Integer, _
     ByVal intZ As Integer) As Single

  Return (intX + intY + intZ) / 3
End Function
```

35) What is the value of intTotal after the following code executes?

```
Dim intNumber1 As Integer = 2
Dim intNumber2 As Integer = 3
Dim intTotal As Integer
intTotal = AddSquares(intNumber1, intNumber2)

Function AddSquares(ByVal intA As Integer, ByVal intB As Integer) As Integer
   intA = intA * intA
   intB = intB * intB
   Return intA + intB
   intA = 0
   intB = 0
End Function
```

   A) 5   B) 13   C) 0   D) 10

36) Which of the following code segments will copy the values of a 5 element array named `intOldValues` into another 5 element array named `intNewValues`?

```
A) intIndex = 0
   Do While intIndex < 5
           intNewValues(intIndex) = intOldValues(intIndex)
           intIndex = intIndex + 1
   Loop
B) intIndex = 1
   Do While intIndex <=5
           intNewValues(intIndex) = intOldValues(intIndex)
           intIndex = intIndex + 1
   Loop
C) For intIndex = 1 To 5
           intNewValues(intIndex) = intOldValues(intIndex)
   Next intIndex
D) For intIndex = 0 To 4
           intOldValues(intIndex) = intNewValues(intIndex)
   Next intIndex
```

37) Values in an array are stored and worked with using a _____.

A) subscript   B) element locator   C) locator   D) method

38) In the array declaration below, what is the significance of the number 7?

```
Dim strNames(7) As String
```

A) It's one greater than the upper bound of the array.
B) It's the value assigned to the array elements.
C) It's the upper bound (highest subscript value) of the array.
D) It indicates the number of elements in the array.

39) The lowest possible subscript of an array is _____.

A) 0   B) –1   C) There is no limit   D) 1

40) Which type of loop is designed *specifically* to use a subscript to access the elements of an array?

A) `For While`   B) `For…Next`   C) `Do Until`   D) `Do While`