MULTIPLE CHOICE

1. Which is the first step in the program development cycle?
   a. design a program
   b. analyze the problem
   c. code the program
   d. test the program
   ANS: B

2. The rules of usage of a programming language is its:
   a. statements
   b. instructions
   c. syntax
   d. logic
   ANS: C

3. The operation in a computer program that transmits data from an outside source to the program is:
   a. pseudocode
   b. input
   c. output
   d. the keyboard
   ANS: B

4. Which is not a way to input data into a program?
   a. from a keyboard
   b. from a mouse
   c. from a data file
   d. all of the above are ways to input data into a program
   ANS: D

5. Which of the following is not an acceptable variable name?
   a. One_name
   b. M
   c. 1_Name
d. TheFirstName

ANS: C

6. Which of the following is not an acceptable variable name?
   a. My Friend
   b. Your Friend
   c. We_Are_All_Friends
   d. all of the above are acceptable variable names

ANS: A

7. If the variable Hours = 10, what is the value of the variable Salary after the following instruction has been executed: \textit{Set Salary} = \textit{Hours} \times 8
   a. 10
   b. 8
   c. 80
   d. cannot tell from the information given

ANS: C

8. What is the value of the variable PayDay after the following statements have been executed:
   \textit{Set Hours} = 5
   \textit{Set PayDay} = 30
   \textit{Set PayDay} = \textit{Hours} \times 6
   a. 30
   b. 150
   c. 180
   d. cannot tell from the information given

ANS: A

9. What is the value of the following expression: \textit{22} \% \textit{5}?
   a. 4.5
   b. 2
   c. 4
   d. 110

ANS: B

10. What is the value of the following expression: \textit{40} \div \textit{4} + \textit{6} \times 4 - 2 ?
   a. 32
   b. 14
   c. 8
   d. 22

ANS: B
11. What is the value of the following expression: \((36 \% 4) + (12 / (3 * 2))\)?
   a. 8
   b. 0
   c. 11
   d. 2

ANS: D

12. What are the variables in the following program segment?
   Write “How many candy bars do you want to buy?”
   Input CandyBars
   Set Price = 2
   Set Cost = CandyBars * Price
   Write “You need to pay” + Cost

   a. CandyBars is the only variable
   b. CandyBars and Cost are the variables
   c. Price and Cost are the variables
   d. CandyBars, Price, and Cost are the variables

ANS: D

13. If \(X = 6\) and \(Y = 2\), what is the value of the following expression:
   \[4 + (3^Y) \times (X + 2) / Y\]
   a. 59
   b. 40
   c. 52
   d. 26

ANS: B

14. Which of the following is not an integer?
   a. 150
   b. 8.0
   c. -386,529
   d. 0

ANS: B

15. Which of the following is not a legitimate statement?
   a. Set MyVariable = “X”
   b. Set MyVariable = 98
   c. Set MyVariable = Lizzy
   d. Set MyVariable = 2 * 64 + 83
ANS: C

16. Which of the following is not a floating point number?
   a.  9.78
   b.  -10.2
   c.  0 333333333
   d.  2

   ANS: D

17. What is the output of the following statements, given that the variable Num1 = 3 and the variable Num2 = 5?
   Write “The sum of” + Num1 + “and” + Num2 + “is 8.”
   a.  The sum of 3 and 5 is 8.
   b.  The sum of Num1 and Num2 is 8.
   c.  The sum of 3 and 5 is 8.
   d.  The sum of 3 and 5 is 8.

   ANS: C

18. The type of number that cannot be expressed as a fraction because the fractional part would go on for infinity without ever repeating a sequence is:
   a.  Floating point
   b.  Rational
   c.  Real
   d.  Irrational

   ANS: D

19. A Boolean variable can have which of the following values:
   a.  true
   b.  false
   c.  1
   d.  0
   e.  Any of the above are possible values for a Boolean variable

   ANS: E

20. Which of the following would you use to store a telephone number?
   a.  Declare PhoneNumber As String
   b.  Declare PhoneNumber As Character
   c.  Declare PhoneNumber As Variable
   d.  Declare PhoneNumber As Float

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TRUE/FALSE

1. True/False: The last step in the program development cycle is to code the program.
   ANS: F

2. True/False: A prompt is used in a program to tell the user to enter some data.
   ANS: T

3. True/False: A variable is the name for a storage location in the computer’s internal memory.
   ANS: T

4. True/False: If \( X = 2 \), the assignment statement \( \text{Set } Y = X + 4 \) will put the value of 6 into both \( X \) and \( Y \).
   ANS: F

5. True/False: The expression \( 43 \% 1 = 0 \) is correct.
   ANS: T

6. True/False: Computers perform all arithmetic operations in order, from left to right.
   ANS: F

7. True/False: If \( X = 4 \) and \( Y = 8 \), then \( Y / X ^ 2 + 3 * X - 1 = 15 \) is correct.
   ANS: F

8. True/False: The two types of numeric data allowed in most programming languages are integers and floating point numbers.
   ANS: T

9. True/False: The two types of non-numeric data allowed in most programming languages are character string and alphanumeric data.
   ANS: F

10. True/False: When you divide two integers, if the result is not an integer (25 ÷ 3, for example), all computer programs will automatically truncate the fractional part of the result.
    ANS: F

11. True/False: A Boolean variable can be used to turn off your computer during the running of a program.
    ANS: F

12. True/False: When a variable is declared, its type should be specified.
    ANS: T
13. True/False: The variable name I_Love_to_eat_pizza is a valid variable name. 
ANS: T

14. True/False: A string variable can hold a numeric value but it cannot be used in a mathematical operation. 
ANS: T

15. True/False: To join two strings together the concatenation operator is used. 
ANS: T

16. True/False: The last operation performed when evaluating the following mathematical expression would be subtraction: 
\[ 75 - 16 + 9 \] 
ANS: F

18. True/False: The last operation performed when evaluating the following mathematical expression would be division: 
\[ 75 / 3 * 4 - 16\% 9 \] 
ANS: F

19. True/False: The number 678,983,546 is a floating point number. 
ANS: F

20. True/False: The number 3.0 is a floating point number. 
ANS: T

SHORT ANSWER

1. A way to develop a program before actually writing the code in a specific programming language is to use a general form, written in natural English, called _________.
ANS: pseudocode

2. In the statement \texttt{Set Number = 93 , Number} is a(n) _________.
ANS: variable

3. In the statement \texttt{Set Temperature = 32 , the value of 32 has been ________ to the variable Temperature.}
ANS: assigned

4. The ________ operator returns the remainder after dividing one number by another.
ANS: modulus

5. Data sent by a program to the screen, a printer, or a file is _________.
ANS: output

6. The pseudocode statement used in this textbook to display messages on the screen is a(n) ________ statement.
ANS: Write

7. Data that consists of words and symbols found in text-based documents is known as ________ ______ data.

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ANS: character string

8. Any whole number—positive, negative, or zero—is a(n) __________.  
ANS: integer

9. When a variable is first assigned a value, it is said to be __________.  
ANS: initialized

10. The statement Declare FreezingPoint As Float will declare a variable named __________ as a(n) __________ type.  
ANS: FreezingPoint, Float

11. Many programming languages include a string operation called __________.  
ANS: concatenation

12. A sequence of characters is a(n) __________ __________.  
ANS: character string

13. If String1 = “Ice” and String2 = “cream”, then the statement Set Yummy = String1 + String2 will result in Yummy having the value of __________.  
ANS: Icecream

14. Complete the following statement to declare an integer variable named Money: Declare __________ __________ __________.  
ANS: Money As Integer

15. A __________ variable can only have one of two possible values—true or false.  
ANS: boolean