Review Questions

You can find the answers in Appendix B.

1. Which of the following numbers is written in hexadecimal format?
    A. 100101
    B. 3268
    C. 18AF
    D. 100101.11

2. Which of the following terms describe concepts related to breaking code into smaller, repeatable sections? (Choose two.)
    A. Functions
    B. Variables
    C. Containers
    D. Methods
    E. Objects

3. Which of the following are examples of object-oriented programming languages? (Choose two.)
    A. Java
    B. XML
    C. Python
    D. C
    E. SQL

4. Which of the following statements is true regarding arrays and vectors?
    A. Arrays contain one data type and are dynamic in length. Vectors can have multiple data types and are fixed in length.
    B. Arrays can have multiple data types and are fixed in length. Vectors have one data type and are dynamic in length.
    C. Arrays can have multiple data types and are dynamic in length. Vectors have one data type and are fixed in length.
    D. Arrays contain one data type and are fixed in length. Vectors can have multiple data types and are dynamic in length.

5. A developer needs to use a code designation for non-English letters. Which notational system does the developer need to use?
    A. ASCII
    B. Unicode
    C. International
    D. Strings

6. Which of the following are examples of interpreted languages? (Choose two.)

   A. Compiled

   B. Query

   C. Scripted

   D. Markup

7. What type of high-level programming language is translated into machine code once and then executed many times?

   A. Compiled

   B. Scripted

   C. Scripting

   D. Markup

8. A programmer wants to write code that directly accesses the computer's hardware. Which is the best type of language for the programmer to use?

   A. Complied

   B. Query

   C. Interpreted

   D. Assembly

9. Interpret the following logic. For data input on someone who is 20 years old, which category will they fall into?

```
if age < 13, then category "Child"
    else if age < 20, then category "Teen"
    else if age < 65, then category "Adult"
    else category "Senior"
```

   A. Child

   B. Teen

   C. Adult

   D. Senior

10. A programmer is writing a program that needs to accept an input of someone's name. What type of variable should the programmer create?

   A. Char

   B. String

   C. Float

   D. Unicode

11. Looping logic makes use of which of the following statements?

   A. while

   B. when

   C. loop

   D. if

12. In object-oriented programming, which of the following are integral parts of objects? (Choose two.)

   A. Arrays

   B. Properties

   C. Attributes

   D. Variables

13. A program shows the number 11010.11. Which data type is this?

   A. Binary

   B. Boolean

   C. Integer

   D. Float

14. You have created an array that can hold 15 items, all of the integer data type. You want to add a 16th integer. Which of the following is the best approach to doing this?

   A. Add it to the existing array.

   B. Create a separate variable for the 16th integer.

   C. Convert the integers to floats and add the 16th integer.

   D. Create a vector and replace the array with it.

15. What type of programming language is designed to retrieve data from a database?

   A. Query

   B. Assembly

   C. Interpreted

   D. Compiled

16. Interpret the following logic. A law enforcement agency has received data indicating that there are ten current threats to public safety. What should the threat level be?

```
if threats < 3, then level "Green"
   else if threats < 6, then level "Yellow"
   else if threats < 9, then level "Orange"
   else if threats < 12, then level "Red"
   else level "Emergency"
```

   A. Green

   B. Yellow

C. Orange

D. Red

E. Emergency

17. Which of the following is an example of a markup language?

A. SQL

B. XML

C. Python

D. Java

18. You want to understand the sequence of a program, from start to finish. Which of the following is the best to use for this purpose?

A. Pseudocode

B. Function

C. Flowchart

D. Object

19. Which of the following programming language types is the lowest-level language?

A. Interpreted

B. Compiled

C. Query

D. Assembly

20. Flowcharts depict which one of the following?

A. Programs

B. Objects

C. Functions

D. Identifiers

Chapter 6: Software Development

1. C. Hexadecimal is also known as base 16. It uses the numbers 1 to 9 and letters A to F.

2. A, D. Functions and methods are used to break code into small, reusable segments.

3. A, C. Java and Python are considered object-oriented languages, as are C++, C#, PHP, Perl, and Ruby.

4. D. Arrays and vectors are containers for data. An array can have only one data type and is fixed in length. Vectors are more flexible, containing multiple data types and being dynamic in length.

5. B. ASCII and Unicode are used for numerical representations of letters and symbols. ASCII covers English letters and some symbols. For non-English, use the superset of ASCII called Unicode.

6. C, D. The three classes of interpreted languages are scripting, scripted, and markup languages.

7. A. Compiled language programs are compiled once and then executed as many times as needed. Scripted, scripting, and markup languages are interpreted languages, which are not compiled with a compiler.

8. D. Assembly is the lowest-level programming language, and it is used when developers want to access computer hardware directly.

9. C. The logic says that anyone younger than 20 is a teen, while anyone younger than 65 is an adult. Since this person is 20 exactly, they are in the Adult category.

10. B. A string is a group of characters—technically, zero or more characters, but not having a fixed length.

11. A. Looping logic is characterized by the while statement.

12. B, C. Objects are made up of properties, attributes, and methods. Arrays and variables could be part of an object but do not have to be.

13. D. It's a float data type, which is a number with a decimal place. It could be binary, but binary is a notational system, not a data type.

14. D. Arrays are of a fixed length, so you can't just add another variable if it's at its maximum length. Vectors can have their length dynamically adjusted and might work better in this situation.

15. A. Query languages are used to obtain data from databases.

16. D. The threat level should be red. Anything from 9 to 11 is in the red range.

17. B. Extensible Markup Language (XML) is an example of a markup language. The other primary markup language is Hypertext Markup Language (HTML).

18. C. A flowchart is designed to depict visually the sequence of events and logic within a program.

19. D. Assembly is the lowest-level programming language. Interpreted and compiled are high-level languages, and query languages are used to get data from a database.

20. A. A flowchart is a visual depiction of a program. It includes the logic components, inputs, and all other properties of the program.