**Starting Out with Java: From Control Structures through Data Structures 4e (Gaddis and Muganda)**

**Chapter 1 Introduction to Computers and Java**

**TRUE/FALSE**

1. Logical errors are mistakes that cause the program to produce erroneous results.

ANS: T

2. The Java Virtual Machine is a program that reads Java byte code instructions and executes them as they are read.

ANS: T

3. Colons are used to indicate the end of a Java statement.

ANS: F

4. Compiled byte code is also called source code.

ANS: F

5. Application software refers to programs that make the computer useful to the user.

ANS: T

6. Each byte is assigned a unique number known as an address.

ANS: T

7. Encapsulation refers to the combining of data and code into a single object.

ANS: T

8. Java source files end with the **.class** extension.

ANS: F

9. A procedure is a set of programming language statements that, together, perform a specific task.

ANS: T

10. A solid-state drive has no moving parts and operates faster than a traditional disk drive.

ANS: T

11. The computer is a tool used by so many professionals that it cannot be easily categorized.

ANS: T

12. Without programmers, the users of computers would have no software, and, without software, computers would not be able to do anything.

ANS: T

13. The contents of a variable cannot be changed while the program is running.

ANS: F

14. Java source files end with the .class extension.

ANS: F

15. When an object's internal data is hidden from outside code and access to that data is retricted to the object's methods, the data is protected from accidental corruption.

ANS: T

**MULTIPLE CHOICE**

1. While \_\_\_\_\_\_\_\_\_\_ is centered on creating procedures, \_\_\_\_\_\_\_\_\_\_ is centered on creating objects.

|  |  |
| --- | --- |
| a. | procedural programming, object-oriented programming |
| b. | object-oriented programming, procedural programming |
| c. | routine programming, method programming |
| d. | procedural programming, class programming |

ANS: A

2. RAM is usually

|  |  |
| --- | --- |
| a. | an input/output device |
| b. | a volatile type of memory, used for temporary storage |
| c. | secondary storage |
| d. | a static type of memory, used for permanent storage |

ANS: B

3. The two primary methods of programming in use today are

|  |  |
| --- | --- |
| a. | procedural and object-oriented |
| b. | hardware and software |
| c. | practical and theoretical |
| d. | desktop and mobile |

ANS: A

4. Validating the results of a program is important to

|  |  |
| --- | --- |
| a. | correct runtime errors |
| b. | make sure the program solves the original problem |
| c. | create a model of the program |
| d. | correct syntax error |

ANS: B

5. Software refers to

|  |  |
| --- | --- |
| a. | programs |
| b. | the physical components a computer is made of |
| c. | firmware |
| d. | data stored in RAM |

ANS: A

6. An object typically hides its data but allows outside code access to

|  |  |
| --- | --- |
| a. | the pseudocode |
| b. | the methods that operate on the data |
| c. | private data members |
| d. | the data files |

ANS: B

7. Variables are

|  |  |
| --- | --- |
| a. | symbolic names made up by the programmer and once created, their values cannot be changed |
| b. | operators that perform operations on one or more operands |
| c. | symbolic names made up by the programmer that represent memory locations |
| d. | reserved words |

ANS: C

8. \_\_\_\_\_\_\_\_\_\_ refers to the physical components that a computer is made of.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Input | c. | Control unit |
| b. | Main memory | d. | Hardware |

ANS: D

9. A characteristic of \_\_\_\_\_\_\_\_\_\_ is that only an object's methods are able to directly access and make changes to an object's data.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | classes | c. | data hiding |
| b. | procedures | d. | component reusability |

ANS: C

10. Because Java byte code is the same on all computers, compiled Java programs

|  |  |
| --- | --- |
| a. | are nonexistent |
| b. | must be re-compiled for each different machine before they can be run |
| c. | are highly portable |
| d. | cannot run on computers with different operating systems |

ANS: C

11. A cross between human language and a programming language is called

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a compiler | c. | the Java Virtual Machine |
| b. | pseudocode | d. | the Java language |

ANS: B

12. Byte code instructions are

|  |  |
| --- | --- |
| a. | machine code instructions |
| b. | syntax errors |
| c. | read and interpreted by the JVM |
| d. | another name for source code |

ANS: C

13. One type of design tool used by programmers when creating a model of a program is

|  |  |  |  |
| --- | --- | --- | --- |
| a. | the ALU | c. | syntax |
| b. | byte code | d. | pseudocode |

ANS: D

14. Key words are

|  |  |
| --- | --- |
| a. | symbols or words that perform operations on one or more operands |
| b. | words or characters representing values that are defined by the programmer |
| c. | the data names in your program |
| d. | words that have a special meaning in the programming language |

ANS: D

15. Computers can do many different jobs because they are

|  |  |  |  |
| --- | --- | --- | --- |
| a. | programmable | c. | automated |
| b. | reliable | d. | electronic |

ANS: A

16. A(n) \_\_\_\_\_\_\_\_\_\_ is a software entity that contains data and procedures.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | object | c. | class |
| b. | program | d. | method |

ANS: A

17. Application software refers to

|  |  |
| --- | --- |
| a. | the programs that make the computer useful to the user |
| b. | the operating system |
| c. | key words |
| d. | pseudocode |

ANS: A

18. The end of a Java statement is indicated by a \_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | bracket (**}**) | c. | semicolon (**;**) |
| b. | asterisk (**\***) | d. | colon (**:**) |

ANS: C

19. What is syntax?

|  |  |
| --- | --- |
| a. | the rules that must be followed when writing a program |
| b. | the words that have a special meaning in the programming language |
| c. | the symbols or words that perform operations in a program |
| d. | the words or characters that are defined by the programmer |

ANS: A

20. A set of programming language statements that perform a specific task is a(n)

|  |  |  |  |
| --- | --- | --- | --- |
| a. | pseudocode chart | c. | object |
| b. | source code | d. | procedure |

ANS: D

21. The central processing unit (CPU) consists of two parts which are

|  |  |
| --- | --- |
| a. | the input and output devices |
| b. | the control unit and the arithmetic and logic unit (ALU) |
| c. | the control unit and main memory |
| d. | the arithmetic and logic unit (ALU) and main memory |

ANS: B

22. There are \_\_\_\_\_\_\_\_\_\_ bits in a byte.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 4 | c. | 16 |
| b. | 8 | d. | 32 |

ANS: B

23. A runtime error is usually the result of

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a logical error | c. | a compiler error |
| b. | a syntax error | d. | bad data |

ANS: A

24. A(n) \_\_\_\_\_\_\_\_\_\_ is used to write computer programs.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | pseudocode document | c. | application |
| b. | operating system | d. | programming language |

ANS: D

25. \_\_\_\_\_\_\_\_\_\_ refers to the physical components that a computer is made of.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | The device | c. | Software |
| b. | Hardware | d. | The system |

ANS: B

26. A computer program is

|  |  |
| --- | --- |
| a. | the same as main memory |
| b. | only used for desktop computers |
| c. | a set of instructions that allow the computer to solve a problem or perform a task |
| d. | another name for an operating system |

ANS: C

27. Which of the following is not part of the programming process?

|  |  |
| --- | --- |
| a. | defining and modeling the problem |
| b. | entering code and compiling it |
| c. | testing and debugging |
| d. | All of these are parts of the programming process |

ANS: D

28. Computer programming is

|  |  |  |  |
| --- | --- | --- | --- |
| a. | an art | c. | both of the above |
| b. | a science | d. | neither of the above |

ANS: C

29. The original name for Java was

|  |  |  |  |
| --- | --- | --- | --- |
| a. | JavaScript | c. | Elm |
| b. | HotJava | d. | Oak |

ANS: D

30. A program is a sequence of instructions stored in

|  |  |  |  |
| --- | --- | --- | --- |
| a. | the CPU | c. | software |
| b. | the computer's memory | d. | firmware |

ANS: B

31. Which of the following is ***not*** one of the major components of a typical computer system?

|  |  |
| --- | --- |
| a. | the CPU |
| b. | input/output devices |
| c. | main memory |
| d. | secondary storage devices |
| e. | All of the above are major components |

ANS: E

32. Byte code instructions are

|  |  |
| --- | --- |
| a. | another name for source code |
| b. | syntax errors |
| c. | machine code instructions |
| d. | read and interpreted by the JVM |

ANS: D

33. Which of the following is a software entity that contains data and procedures?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a method | c. | a class |
| b. | an object | d. | a program |

ANS: B

34. Each different type of CPU has its own

|  |  |  |  |
| --- | --- | --- | --- |
| a. | syntax | c. | machine language |
| b. | firmware | d. | software |

ANS: C

35. Internally, the central processing unit (CPU) consists of two parts which are \_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| a. | the control unit and the arithmetic/logic unit (ALU) |
| b. | the control unit and main memory |
| c. | the arithmetic/logic unit (ALU) and main memory |
| d. | the input and output devices |

ANS: A

36. Java was developed by

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Microsoft | c. | Sun Microsystems |
| b. | IBM | d. | Hewlett-Packard |

ANS: C

37. Which of the following will compile a program called ReadIt?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | java ReadIt.java | c. | javac ReadIt.java |
| b. | java ReadIt.javac | d. | javac ReadIt.javac |

ANS: C

38. Which of the following will run the compiled program called ReadIt?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | java ReadIt.java | c. | run ReadIt |
| b. | java ReadIt | d. | go ReadIt |

ANS: B