**Starting Out with Java: From Control Structures through Objects 8e (Gaddis)**

**Chapter 2 Java Fundamentals**

**TRUE/FALSE**

1. Programming style includes techniques for consistently putting spaces and indentation in a program to help create visual cues.

ANS: T

2. Both character and string literals can be assigned to a **char** variable.

ANS: F

3. A variable's scope is the part of the program that has access to that variable.

ANS: T

4. Named constants are initialized with a value and that value cannot change during the execution of the program.

ANS: T

5. When you call one of the **Scanner** class's methods to read a primitive value, such as **nextInt** or **nextDouble**, and then call the **nextLine** method to read a string, an annoying and hard-to-find problem can occur.

ANS: T

6. Class names and keywords are examples of variables.

ANS: F

7. The Java API provides a class named **Math** that contains numerous methods which are useful for performing complex mathematical operations.

ANS: T

8. The **System.out.printf** method allows you to format output in a variety of ways.

ANS: T

9. A Java program will not compile unless it contains the correct line numbers.

ANS: F

10. Java is not case sensitive.

ANS: F

11. If the compiler encounters a statement that uses a variable before the variable is declared, an error will result.

ANS: T

12. If you use the var keyword to declare a variable, you cannot initialize the variable with a value.

ANS: F

**MULTIPLE CHOICE**

1. Which of the following is a value that is written into the code of a program?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a literal | c. | an operator |
| b. | an assignment statement | d. | a variable |

ANS: A

2. A Java program must have at least one of the following:

|  |  |
| --- | --- |
| a. | a comment |
| b. | a class definition |
| c. | a **System.out.println();** statement |
| d. | a variable declaration |

ANS: B

3. Which of the following would contain the translated Java byte code for a program named Demo?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Demo.java | c. | Demo.class |
| b. | Demo.code | d. | Demo.byte |

ANS: C

4. Which of the following is a named storage location in the computer's memory?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a literal | c. | a constant |
| b. | an operator | d. | a variable |

ANS: D

5. Which of the following is not a valid Java comment?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **/\*\* Comment one \*/** | c. | **// Comment three** |
| b. | **\*/ Comment two /\*** | d. | **/\* Comment four \*/** |

ANS: B

6. To compile a program named First you would use which of the following commands?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | java First.java | c. | javac First.java |
| b. | javac First | d. | compile First.javac |

ANS: C

7. A Java source file must be saved with the extension

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **.java** | c. | **.src** |
| b. | **.javac** | d. | **.class** |

ANS: A

8. Which of the following is not a rule that must be followed when naming identifiers?

|  |  |
| --- | --- |
| a. | After the first character, you may use the letters a-z, A-Z, an underscore, a dollar sign, or the digits 0-9. |
| b. | Identifiers can contain spaces. |
| c. | Uppercase and lowercase characters are distinct. |
| d. | The first character must be one of the letters a-z, A-Z, an underscore, or a dollar sign. |

ANS: B

9. Character literals are enclosed in \_\_\_\_\_\_\_\_\_\_ and string literals are enclosed in \_\_\_\_\_\_\_\_\_\_.

|  |  |
| --- | --- |
| a. | single quotes, double quotes |
| b. | double quotes, single quotes |
| c. | single quotes, single quotes |
| d. | double quotes, double quotes |

ANS: A

10. Variables are classified according to their

|  |  |  |  |
| --- | --- | --- | --- |
| a. | names | c. | locations |
| b. | values | d. | data types |

ANS: D

11. What is the result of the following expression?

**17 % 3 \* 2 - 12 + 15**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | **105** | b. | **12** | c. | **7** | d. | **8** |

ANS: C

12. What is the result of the following expression?

**10 + 5 \* 3 - 20**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | **-5** | b. | **-50** | c. | **5** | d. | **25** |

ANS: C

13. In the following Java statement, what value is stored in the variable **name**?

**String name = "John Doe";**

|  |  |
| --- | --- |
| a. | **"name"** |
| b. | the memory address where **"John Doe"** is located |
| c. | the memory address where  **name** is located |
| d. | **John Doe** |

ANS: B

14. What is the value of **z** after the following statements have been executed?

**int x = 4, y = 33;**

**double z;**

**z = (double) (y / x);**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | **8.25** | b. | **4** | c. | **0** | d. | **8.0** |

ANS: D

15. What output will be displayed as a result of executing the following code?

**int x = 5, y = 20;**

**x += 32;**

**y /= 4;**

**System.out.println("x = " + x + ", y = " + y);**

|  |  |
| --- | --- |
| a. | **x = 160, y = 80** |
| b. | **x = 32, y = 4** |
| c. | **x = 37, y = 5** |
| d. | **x = 9, y = 52** |

ANS: C

16. Which of the following statements will correctly convert the data type, if **x** is a **float** and **y** is a **double**?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **x = float y;** | c. | **x = (float)y;** |
| b. | **x = <float>y;** | d. | **x = y;** |

ANS: C

17. Which of the following statements is invalid?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **double r = 9.4632E15;** | c. | **double r = 2.9X106;** |
| b. | **double r = 9.4632e15;** | d. | **double r = 326.75;** |

ANS: C

18. To print **"Hello, world"** on the monitor, which of the following Java statements should be used?

|  |  |
| --- | --- |
| a. | **System.out.println("Hello, world");** |
| b. | **System Print = "Hello, world";** |
| c. | **SystemOutPrintln('Hello, world');** |
| d. | **system.out.println(Hello, world);** |

ANS: A

19. The **boolean** data type may contain which of the following range of values?

|  |  |
| --- | --- |
| a. | **-128 to + 127** |
| b. | **true or false** |
| c. | **-2,147,483,648 to +2,147,483,647** |
| d. | **-32,768 to +32,767** |

ANS: B

20. Variables of the **boolean** data type are useful for

|  |  |
| --- | --- |
| a. | evaluating conditions that are either true or false |
| b. | working with small integers |
| c. | working with very large integers |
| d. | evaluating scientific notation |

ANS: A

21. What would be displayed as a result of executing the following code?

**int x = 578;**

**System.out.print("There are " +**

**x + 5 + "\n" +**

**"hens in the hen house.");**

|  |  |
| --- | --- |
| a. | **There are 583**  **hens in the hen house.** |
| b. | **There are 5785**  **hens in the hen house.** |
| c. | **There are x5\nhens in the hen house.** |
| d. | **There are 5785 hens in the hen house.** |

ANS: B

22. What would be displayed as a result of executing the following code?

**final int x = 22, y = 4;**

**y += x;**

**System.out.println("x = " + x + ", y = " + y)**

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **x = 22, y = 26** | c. | **x = 22, y = 88** |
| b. | **x = 22, y = 4** | d. | Nothing. There is an error in the code. |

ANS: D

23. What would be displayed as a result of executing the following code?

**int x = 15, y = 20, z = 32;**

**x += 12;**

**y /= 6;**

**z -= 14;**

**System.out.println("x = " + x +**

**", y = " + y +**

**", z = " + z);**

|  |  |
| --- | --- |
| a. | **x = 27, y = 3.333, z = 18** |
| b. | **x = 27, y = 2, z = 18** |
| c. | **x = 37, y = -14, z = 4** |
| d. | **x = 27, y = 3, z = 18** |

ANS: D

24. What is the value of **z** after the following code is executed?

**int x = 5, y = 28;**

**float z;**

**z = (float) (y / x);**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | **5.6** | b. | **3.0** | c. | **5.0** | d. | **5.60** |

ANS: C

25. Which of the following statements correctly creates a **Scanner** object for keyboard input?

|  |  |
| --- | --- |
| a. | **Scanner kbd = new Scanner(System.keyboard);** |
| b. | **Scanner keyboard = new Scanner(System.in);** |
| c. | **Scanner keyboard(System.in);** |
| d. | **Keyboard scanner = new Keyboard(System.in);** |

ANS: B

26. Which **Scanner** class method reads a **String**?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | **nextLine** | c. | **nextString** |
| b. | **charAt** | d. | **getLine** |

ANS: A

27. The primitive data types only allow a(n) \_\_\_\_\_\_\_\_\_\_ to hold a single value.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | class | c. | object |
| b. | literal | d. | variable |

ANS: D

28. In Java, \_\_\_\_\_\_\_\_\_\_ must be declared before they can be used.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | variables | c. | keywords |
| b. | literals | d. | comments |

ANS: A

29. If the following Java statements are executed, what will be displayed?

System.out.println("The top three winners are\n");

System.out.print("Jody, the Giant\n");

System.out.print("Buffy, the Barbarian");

System.out.println("Adelle, the Alligator");

|  |  |
| --- | --- |
| a. | The top three winners are  Jody, the Giant  Buffy, the Barbarian  Adelle, the Alligator |
| b. | The top three winners are Jody, the Giant\nBuffy, the BarbarianAdelle, and the Albino |
| c. | The top three winners are  Jody, the Giant\nBuffy, the BarbarianAdelle, the Alligator |
| d. | The top three winners are  Jody, the Giant  Buffy, the BarbarianAdelle, the Alligator |

ANS: D

30. A value that is written into the code of a program is a(n) \_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | literal | c. | variable |
| b. | assignment statement | d. | operator |

ANS: A

31. When the + operator is used with strings, it is known as the

|  |  |  |  |
| --- | --- | --- | --- |
| a. | assignment operator | c. | addition operator |
| b. | string concatenation operator | d. | combines assignment operator |

ANS: B

32. What would be printed out as a result of the following code?

System.out.println("The quick brown fox" +

"jumped over the \n"

"slow moving hen.");

|  |  |
| --- | --- |
| a. | The quick brown fox jumped over the \nslow moving hen. |
| b. | The quick brown fox jumped over the  slow moving hen. |
| c. | The quick brown fox  jumped over the  slow moving hen. |
| d. | Nothing - this is an error |

ANS: D

33. Which of the following is ***not*** a rule that must be followed when naming identifiers?

|  |  |
| --- | --- |
| a. | The first character must be one of the letters a-z, A-Z, and underscore or a dollar sign. |
| b. | Identifiers can contain spaces. |
| c. | Uppercase and lowercase characters are distinct. |
| d. | After the first character, you may use the letters a-z, A-Z, the underscore, a dollar sign, or digits 0-9. |

ANS: B

34. Which of the following cannot be used as identifiers in Java?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | variable names | c. | keywords |
| b. | class names | d. | objects |

ANS: C

35. Which of the following is not a primitive data type?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | short | c. | float |
| b. | long | d. | string |

ANS: D

36. Which of the following is valid?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | float y;  y = 54.9; | c. | float w;  w = 1.0f; |
| b. | float y;  double z;  z = 934.21;  y = z; | d. | float v;  v = 1.0 |

ANS: C

37. If x has been declared an int, which of the following statements is invalid?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | x = 0; | c. | x = 1,000; |
| b. | x = -59832; | d. | x = 592 |

ANS: C

38. To display the output on the next line, you can use the println method or use the \_\_\_\_\_\_\_\_\_\_ escape sequence in the print method.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | \n | b. | \r | c. | \t | d. | \b |

ANS: A

39. Every Java application program must have

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a class named MAIN | c. | at least two data types |
| b. | a method named main | d. | integer variables |

ANS: B

40. What will be displayed as a result of executing the following code?

int x = 6;

String msg = "I am enjoying this class.";

String msg1 = msg.toUpperCase();

String msg2 = msg.toLowerCase();

char ltr = msg.charAt(x);

int strSize = msg.length();

System.out.println(msg);

System.out.println(msg1);

System.out.println(msg2);

System.out.println("Character at index x = " + ltr);

System.out.println("msg has " + strSize + "characters.");

|  |  |  |  |
| --- | --- | --- | --- |
| a. | I am enjoying this class.  I AM ENJOYING THIS CLASS.  i am enjoying this class.  Character at index x = e  msg has 24 characters. | c. | I am enjoying this class.  I AM ENJOYING THIS CLASS.  i am enjoying this class.  Character at index x = n  msg has 24 characters. |
| b. | I am enjoying this class.  I AM ENJOYING THIS CLASS.  i am enjoying this class.  Character at index x = e  msg has 25 characters. | d. | I am enjoying this class.  I AM ENJOYING THIS CLASS.  i am enjoying this class.  Character at index x = n  msg has 25characters. |

ANS: D

41. What will be displayed as a result of executing the following code?

public class test

{

public static void main(String[] args)

{

int value1 = 9;

System.out.println(value1);

int value2 = 45;

System.out.println(value2);

System.out.println(value3);

value = 16;

}

}

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 9  45  16 | c. | 9 45 16 |
| b. | 94516 | d. | Nothing. This is an error |

ANS: D

42. This is an interactive program that lets you enter Java programming statements and immediately see each statement's results.

|  |  |
| --- | --- |
| a. | PowerShell |
| b. | JShell |
| c. | JavaShell |
| d. | JTerminal |

ANS: B

43. If you use this keyword to declare a local variable, you do not have to specify the variable's data type.

|  |  |
| --- | --- |
| a. | var |
| b. | auto |
| c. | type |
| d. | local |

ANS: A

44. How would you rewrite the following statement using the word var to declare the variable?

int value = 99;

|  |  |
| --- | --- |
| a. | var int value = 99; |
| b. | int var value = 99; |
| c. | var value = 99; |
| d. | var value; value = 99; |

ANS: C