

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

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 key words 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

MULTIPLE CHOICE

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

a. a literal
b. an assignment statement
c. an operator
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
b. Demo.code
c. Demo.class
d. Demo.byte

ANS: C

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

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

ANS: D

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

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

ANS: B

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

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

ANS: C

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

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

ANS: A

8. Which of the following is not a rule that must be followed when naming identifiers?
- After the first character, you may use the letters a-z, A-Z, an underscore, a dollar sign, or the digits 0-9.
 - Identifiers can contain spaces.
 - Uppercase and lowercase characters are distinct.
 - 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 _____.
- single quotes, double quotes
 - double quotes, single quotes
 - single quotes, single quotes
 - double quotes, double quotes

ANS: A

10. Variables are classified according to their
- names
 - values
 - locations
 - 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";
```

- "name"**
- the memory address where **"John Doe"** is located
- the memory address where **name** is located
- 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;**
- b. **x = <float>y;**
- c. **x = (float)y;**
- d. **x = y;**

ANS: C

17. Which of the following statements is invalid?

- a. **double r = 9.4632E15;**
- b. **double r = 9.4632e15;**
- c. **double r = 2.9X106;**
- 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
- b. x = 22, y = 4
- c. x = 22, y = 88
- 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**
 - b. **charAt**
 - c. **nextString**
 - d. **getline**

ANS: A

27. The primitive data types only allow a(n) _____ to hold a single value.
- a. class
 - b. literal
 - c. object
 - d. variable

ANS: D

28. In Java, _____ must be declared before they can be used.
- a. variables
 - b. literals
 - c. key words
 - 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
 - b. assignment statement
 - c. variable
 - d. operator

ANS: A

31. When the + operator is used with strings, it is known as the
- a. assignment operator
 - b. string concatenation operator
 - c. addition 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
 - b. class names
 - c. key words
 - d. objects

ANS: C

35. Which of the following is not a primitive data type?
- a. short
 - b. long
 - c. float
 - d. string

ANS: D

36. Which of the following is valid?
- a.

```
float y;  
y = 54.9;
```
 - b.

```
float y;  
double z;  
z = 934.21;  
y = z;
```
 - c.

```
float w;  
w = 1.0f;
```
 - 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;
```
 - b.

```
x = -59832;
```
 - c.

```
x = 1,000;
```
 - 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
 - b. a method named main
 - c. at least two data types
 - 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.
- 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.
- 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.
- 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
- b. 94516
- c. 9 45 16
- d. Nothing. This is an error

ANS: D