XIDIAN UNIVERSITY

SCHOOL OF COMPUTER SCIENCE AND TECHNOLOGY

Programming in Java

2019

Lab-4B

TRUE/FALSE

1. Both character and string literals can be assigned to a **`char`** variable.
2. A variable's scope is the part of the program that has access to that variable.
3. Named constants are initialized with a value and that value cannot change during the execution of the program.
4. 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.
5. Class names and key words are examples of variables.
6. The Java API provides a class named **`Math`** that contains numerous methods which are useful for performing complex mathematical operations.
7. The **`System.out.printf`** method allows you to format output in a variety of ways.
8. A Java program will not compile unless it contains the correct line numbers.
9. Java is not case sensitive.
10. The if-else statement will execute one group of statements if its boolean expression is true or another group if its boolean expression is false.
11. In a switch statement, if two different values for the CaseExpression would result in the same code being executed, you must have two copies of the code, one after each CaseExpression.
12. All it takes for an OR expression to be true is for one of the subexpressions to be true.
13. All it takes for an AND expression to be true is for one of the subexpressions to be true.
14. When two strings are compared using the String class's compareTo method, the comparison is not case sensitive.
15. When testing for character values, the switch statement does not test for the case of the character.
16. If the expression on the left side of the && operator is false, the expression on the right side will not be checked.
17. Unicode is an international encoding system that is extensive enough to represent all the characters of all the world's alphabets.
18. A local variable's scope always ends at the closing brace of the block of code in which it is declared.

19. When testing for character values, the switch statement does not test for the case of the character.

20. In a switch statement, each of the case values must be unique.

21. The String.format method works exactly like the System.out.printf method, except that it does not display the formatted string on the screen.

22. The System.out.printf method formats a string and displays it in the console window.

23. When the `break` statement is encountered in a loop, all the statements in the body of the loop that appear after it are ignored, and the loop prepares for the next iteration.

24. When the `continue` statement is encountered in a loop, all the statements in the body of the loop that appear after it are ignored, and the loop prepares for the next iteration.

25.A file must always be opened before using it and closed when the program is finished using it.

26. In a `for` loop, the control variable is always incremented.

27. The `do-while` loop must be terminated with a semicolon.

28. The `do-while` loop is ideal in situations where you always want the loop to iterate at least once.

29. When you pass the name of a file to the `PrintWriter` constructor and the file already exists, it will be erased and a new empty file with the same name will be created.

30. When you open a file with the `PrintWriter` class, the class can potentially throw an `IOException`.

31. The `while` loop is always the best choice in situations where the exact number of iterations is known.

32. Java provides a set of simple unary operators designed just for incrementing and decrementing variables.

33. The `while` loop has two important parts: (1) a `boolean` expression that is tested for a `true` or `false` value, and (2) a statement or block of statements that is repeated as long as the expression is `true`.

34. In a `for` loop, the control variable cannot be initialized to a constant value and tested against a constant value.

MULTIPLE CHOICE

1. What is the result of the following expression?
```
17 % 3 * 2 – 12 + 15
```

a. 105 b. 12 c. 7 d. 8

2. What is the result of the following expression?
```
10 + 5 * 3 – 20
```

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

3. 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

4. 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

5. 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

6. 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.

7. 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.

8. 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

9. 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

10. 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);

11. Which Scanner class method reads a String?

a. nextLine c. nextString
b. charAt d. getLine

12. If str1 and str2 are both String objects, which of the following expressions will correctly determine whether or not they are equal?

a. str1 = str2 c. str1.equals(str2)
b. str1 && str2 d. str1 += str2

13. Which of the following expressions could be used to perform a case-insensitive comparison of two String objects named str1 and str2?

a. str1.equalsIgnoreCase(str2)
b. str1.equalsInsensitive(str2)
c. str1 != str2
d. str1 || str2

14. What will be the values of ans, x, and y after the following statements are executed?

```
int ans = 35, x = 50, y = 50;
if (x >= y)
{
     ans = x + 10;
     x -= y;
}
else
{
     ans = y + 10;
     y += x;
}
```

a. ans = 60, x = 0, y = 50
b. ans = 45, x = 50, y = 0
c. ans = 45, x = 50, y = 50
d. ans = 60, x = 50, y = 100

15. What will be the value of x after the following statements are executed?

```
int x = 75;
int y = 60;
if (x > y)
   x = x - y;
```

a. 60 b. 75 c. 15 d. 135

16. What will be the value of bonus after the following statements are executed?

```
int bonus, sales = 10000;
if (sales < 5000)
     bonus = 200;
else if (sales < 7500)
     bonus = 500;
else if (sales < 10000)
     bonus = 750;
else if (sales < 20000)
     bonus = 1000;
else
     bonus = 1250;
```

a. 750 b. 1250 c. 500 d. 1000

17. What will be the value of discountRate after the following statements are executed?

```
double discountRate = 0.0;
int purchase = 100;
if (purchase > 1000)
     discountRate = 0.05;
else if (purchase > 750)
     discountRate = 0.03;
else if (purchase > 500)
     discountRate = 0.01;
```

a. 0.0 b. 0.05 c. 0.03 d. 0.01

18. What will be the value of discountRate after the following statements are executed?

```
double discountRate = 0.0;
int purchase = 1250;
char cust = 'N';
if (purchase > 1000)
     if (cust == 'Y')
          discountRate = 0.05;
     else
          discountRate = 0.04;
else if (purchase > 750)
     if (cust == 'Y')
          discountRate = 0.04;
     else
          discountRate = 0.03;
else
     discountRate = 0.0;
```

a. 0.0 b. 0.04 c. 0.05 d. 0.03

19. What will be the value of x after the following statements are executed?

```
int x = 10;
switch (x)
{
     case 10:
          x += 15;
     case 12:
          x -= 5;
          break;
     default:
          x *= 3;
}
```

a. 30 b. 20 c. 25 d. 5

20. What will be the value of discountRate after the following statements are executed?

```
double discountRate;
char custType = 'B';
```

```
switch (custType)
{
     case 'A':
          discountRate = 0.08;
          break;
     case 'B':
          discountRate = 0.06;
     case 'C':
          discountRate = 0.04;
     default:
          discountRate = 0.0;
}
```

a. 0.08 b. 0.06 c. 0.04 d. 0.0

21. What will be the value of ans after the following statements are executed?

```
int x = 40;
int y = 40;
if (x = y)
     ans = x + 10;
```

a. 30 c. 50
b. 80 d. The code contains an error and will not compile.

22. What will be displayed after the following statements are executed?

```
int ans = 10;
int x = 65;
int y = 55;
if (x >= y)
{
     int ans = x + y;
}
System.out.println(ans);
```

a. 10 c. 100
b. 120 d. The code contains an error and will not compile.

23.What will be displayed after the following statements are executed?

```
int y = 10;
if (y == 10)
{
     int x = 30;
     x += y;
     System.out.println(x);
}
```

a. 40 c. 20
b. 30 d. The code contains an error and will not compile.

24. What will be the value of pay after the following statements are executed?

```
int hours = 45;
double pay, payRate = 10.00;
pay = hours <= 40 ? hours * payRate :
      40 * payRate + (hours - 40) *payRate * 1.5;
```

a. 400.00 c. 465.00
b. 450.00 d. 475.00

25. Which of the following expressions determines whether the char variable, chrA, is not equal to the letter 'A'?

a. chrA == 'A' c. chrA || 'A'
b. chrA != 'A' d. chrA.notEquals(A)

26. Which of the following statements determines whether the variable temp is within the range of 0 through 100 (inclusive)?

a. if (temp >= 0 && temp <= 100)
b. if (temp > 0 && temp < 100)
c. if (temp >= 0 || temp <= 100)
d. if (temp > 0 || temp < 100)

27. What would be the value of bonus after the following statements are executed?

```
int bonus, sales = 85000;
char dept = 'S';
if (sales > 100000)
   if (dept == 'R')
         bonus = 2000;
        else
         bonus = 1500;
else if (sales > 75000)
        if (dept == 'R')
         bonus = 1250;
        else
         bonus = 1000;
else
        bonus = 0;
```

a. 2000 b. 1500 c. 1250 d. 1000

28. Which of the following is the correct boolean expression to test for: int x being a value between, but not including, 500 and 650, or int y not equal to 1000?

a. ((x >= 500 && x <= 650) && (y != 1000))
b. ((x > 500 AND x < 650) OR !(y.equal(1000)))
c. ((x > 500 && x < 650) || (y != 1000))
d. ((x < 500 && x > 650) || !(y == 1000))

29. Which of the following is the correct boolean expression to test for: int x being a value less than or equal to 500 or greater than 650, or int y not equal to 1000?

a. ((x >= 500 && x < 650) && (y != 1000))
b. ((x <= 500 OR x > 650) AND !(y.equal(1000)))
c. ((x >= 500 || x < 650) || (y != 1000))
d. ((x <= 500 || x > 650) && !(y == 1000))

30. Which of the following will format 12.78 to display as 12.8%?

a. System.out.printf("%2.1d%", 12.78);
b. System.out.printf("%.2f%%", 12.78);
c. System.out.printf("%1.2d%", 12.78);
d. System.out.printf("%.1f%%", 12.78);

31. What will be the value of x after the following code is executed?

```
int x = 10;
while (x < 100)
{
      x += 100;
}
```

a. 100 b. 90 c. 110 d. 10

32. What will be the values of x and y as a result of the following code?

```
int x = 25, y = 8;
x += y++;
```

a. x = 34, y = 9 c. x = 33, y = 8
b. x = 25, y = 8 d. x = 33, y = 9

33. How many times will the following do-while loop be executed?

```
int x = 11;
do
{
      x += 20;
} while (x > 100);
```

a. 0 b. 1 c. 5 d. 4

34. What will be the value of x after the following statements are executed?

```
int x = 10;
for (int y = 5; y < 20; y +=5)
      x += y;
```

a. 25 b. 30 c. 50 d. 40

35. How many times will the following do-while loop be executed?

```
int x = 11;
do
```

```
{
      x += 20;
} while (x <= 100);
```

a. 5 b. 4 c. 3 d. 1

36. How many times will the following for loop be executed?

```
for (int count = 10; count <= 21; count++)
      System.out.println("Java is great!");
```

a. 0 b. 12 c. 10 d. 11

37. What will be the value of x after the following code is executed?

```
int x, y = 15;
x = y--;
```

a. 14 b. 16 c. 0 d. 15

38. What will be the value of x after the following code is executed?

```
int x, y = 4, z = 6;
x = (y++) * (++z);
```

a. 24 b. 28 c. 30 d. 35

39. What will be printed after the following code is executed?

```
for (int number = 5; number <= 15; number +=3)
   System.out.print(number + ", ");
```

a. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
b. 5, 8, 11, 14, 17,
c. 5, 8, 11, 14
d. This is an invalid for statement.

40. What will be the values of x aand y after the following code is executed?

```
int x = 12, y = 5;
x += y--;
```

a. x = 12, y = 5 c. x = 17, y = 5
b. x = 16, y = 4 d. x = 17, y = 4

41. What will be the values of x and y after the following code is executed?

```
int x, y = 15, z = 3;
x = (y--) / (++z);
```

a. 3 b. 4 c. 5 d. 6

42. What will be the value of x after the following code is executed?

```
int x = 10, y = 20;
while (y < 100)
{
```

```
        x += y;
        y += 20;
}
```

a. 130 b. 210 c. 110 d. 90

43. What will be the value of x after the following code is executed?

```
int x = 10, y = 20;
while (y < 100)
{
        x += y;
}
```

a. 90 c. 210
b. 110 d. this is an infinite loop

Lab4: Deadline: 2019-11-15 (before 6pm) Submit: Lab4Submit.doc

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