

True/False

- if or if else

1. T Control structures alter the normal/sequential flow of control.
2. F Every if statement must have a corresponding else. *(can just have if () ;)*
3. T A set of steps for what operations need to be performed in order to translate inputs to outputs is called an algorithm.
4. T In Java, public is a reserved word or keyword.
5. F An operating system or OS is a type of hardware on a computer. *↳ a software*

Multiple Choice. Circle the correct answer.

6. What is the following output:

```
int x = 100;
int y = 300;
```

```
if (x > 100 || y <= 300)
    System.out.println(x + " " + y + " " + (x + y));
else
    System.out.println(x + " " + y + " " + (2 * x - y));
```

only one needs to be true here

$\frac{x}{100}$ $\frac{y}{300}$

- a. 100 300 0
- b. 100 300 400
- c. 400 300 400
- d. 100 300 -400

7. What is the following output:

```
int x = 100;
int y = 200;
```

```
if (x > 100 && y <= 200)
    System.out.println(x + " " + y + " " + (x + y));
else
    System.out.println(x + " " + y + " " + (2 * x - y));
```

$\frac{x}{100}$ $\frac{y}{200}$

$2 \times 100 - 200 = 0$

both must be true, so this is false

- a. 100 200 0
- b. 100 100 0
- c. 100 200 300
- d. 200 100 300
- e. 0

8. The keyword _____ signals the presence of conditional execution.

- a. now
- b. if
- c. public
- d. maybe

9. What is the following output?

```
if (5 < 3)
    System.out.println("*");
else if (7 == 8)
    System.out.println("&");
else
    System.out.println("$");
```

- a. &
- b. *
- c. \$
- d. none of these

10. What is the following output?

```
if (6 < 2 * 5)
    System.out.print("Hello");
    System.out.print(" There");
```

this is the if stmt, no { }
both print stmts, no
new line.

- a. Hello
- b. Hello
There
- c. Hello There
- d. There

11. Which intrinsic/primitive data type can hold only one of two values?

- a. char
- b. int
- c. boolean *true or false*
- d. float

12. A program called a compiler translates a Java program into _____.

- a. machine language
- b. assembly language
- c. bytecode
- d. C++

13. _____ a program only verifies the syntax; it does not mean that the program will produce the desired results.

- a. Compiling
- b. Testing
- c. Developing
- d. Analyzing

14. A Java compiler turns a file with a .java extension into a file with a _____ extension.

- a. .src
- b. .class
- c. .run
- d. .exe

15. Which of the following operators has the lowest precedence?

- a. ||
- b. &&
- c. !=
- d. <=
- e. ()

16. All Java statements must end with a _____ .

- a. .
- b. :
- c. ;
- d. \

17. Which of the following variables is correctly declared and initialized?

- a. int age;
- b. char c;
- c. weight = 23.7;
- d. int age = 22;

18. Which of the following prints a line of text followed by a new line return to the output terminal?

- a. System.out.println(text);
- b. Output.pring(text);
- c. System.out.print(text);
- d. Output.println(text);

19. Which one of the following is **NOT** a Java keyword?

- a. static
- b. void
- c. int
- d. one

20. A(n) _____ variable can store both integers and floating-point numbers.

- a. double
- b. mixed
- c. boolean
- d. integral

Match the correct relational operator symbol to its meaning:

21. C !=

22. B >

23. A <

24. E >=

25. H ==

26. G <=

27. F &&

28. D ||

29. I !

A. is less than

B. is greater than

C. is not equal to

D. OR

E. is greater than or equal to

F. AND

G. is less than or equal to

H. is equal to

I. NOT

30. What is printed as a result of the following code segment?

```
int result = 8 - 4 / 3 + 5 % (7 * 2 - 6);  
System.out.println(result);
```

- a. 0
- b. 4
- c. 6
- d. 7
- e. 12

$$8 - 1 + 5 \% 8$$
$$5$$

$$\begin{array}{r} 0 \\ 8 \overline{) 5} \\ \underline{0} \\ 5 \end{array}$$

31. Which of the following statements determines the square root of a number and assigns it to the variable s?

- a. `s = sqrt(number);`
- b. `s = Math.sqrt(number);`
- c. `number = sqrt(s);`
- d. `number = Math.sqrt(s);`

32. What is the output of the following code segment?

```
t = 10;
if (t >= 7)
    System.out.print("AAA");
    System.out.print("BBB");
```

if stmt goes w/ this only

if t was 6, only BBB printed

- a. AAA
- b. BBB
- c. AAABBB
- d. nothing

33. What class contains the methods abs, pow, random, and sqrt? Math

34. Complete the line of code so that n is assigned a random integer value between 10 and 100 (inclusive). 100 - 10 + 1 = 91

```
int n = (int)(91 * Math.random()) + 10;
```

35. What are the range of values that can be generated from the following:

```
int r = (int)(Math.random() * 32) - 4;
```

-4 through 27

36. Determine the exact value of the following Java arithmetic expressions.

- a. `Math.sqrt(16.0);` 4.0
- b. `Math.pow(2, 4);` 16.0
- c. `Math.abs(-3.4);` 3.4
- d. `Math.sqrt(Math.abs(-9));` 3.0
- e. `Math.sqrt(49);` 7.0

37. What is the final value of x in the following:

- a. `x = 10;`
`x++;` 11 $\frac{x}{10}$
 $\frac{10}{11}$
- b. `x = 10;`
`x--;` 9 $\frac{x}{10}$
 $\frac{10}{9}$
- c. `x = 10;`
`x+=5;` 15 $\frac{x}{10}$
 $\frac{10}{15}$
- d. `x = 10;`
`y = 2;`
`x *= y;` 20 $\frac{x}{10}$ $\frac{10}{2}$
 20

38. What is the output of the following code segment?

```
t = 5;  
if(t >= 8)  
    System.out.print("AAA");  
    System.out.print("BBB");
```

- e. AAA
- f. BBB
- g. AAABBB
- h. nothing

39. What is the range of the random number r generated by the pseudocode below?

```
r <- RANDOM(-3, 15) ← not on test tho
```

- a) 0 and 15
- b) -3 and 7
- c) -3 and 15
- d) -3 and 14

40. What will be printed by the pseudocode code fragment below? (read carefully)

```
h <- 4.3  
IF(h ≥ 5.0)  
    DISPLAY("big ")  
IF(h ≥ 4.0)  
    DISPLAY("medium "); ←  
IF(h ≥ 3.0) ←  
    DISPLAY("small ");  
ELSE  
    DISPLAY("tiny ");
```

- a) tiny
- b) medium
- c) big medium small
- d) medium small

40. What will be printed by the pseudocode code fragment below? (read carefully)

```
h <- 1.3  
IF(h ≥ 5.0)  
    DISPLAY("big ")  
IF(h ≥ 4.0)  
    DISPLAY("medium ");  
IF(h ≥ 3.0)  
    DISPLAY("small ");  
ELSE  
    DISPLAY("tiny ");
```

- a) tiny
- b) medium
- c) big medium small
- d) medium small