

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) The "less than or equal to" comparison operator in Java is _____. 1) _____
 A) << B) != C) <= D) =< E) <
- 2) The equal comparison operator in Java is _____. 2) _____
 A) == B) != C) ^= D) <>
- 3) What is $1 + 1 + 1 + 1 + 1 == 5$? 3) _____
 A) true
 B) false
 C) There is no guarantee that $1 + 1 + 1 + 1 + 1 == 5$ is true.
- 4) What is $1.0 + 1.0 + 1.0 + 1.0 + 1.0 == 5.0$? 4) _____
 A) true
 B) false
 C) There is no guarantee that $1.0 + 1.0 + 1.0 + 1.0 + 1.0 == 5.0$ is true.
- 5) In Java, the word true is _____. 5) _____
 A) same as value 1 B) a Java keyword
 C) a Boolean literal D) same as value 0
- 6) Which of the following code displays the area of a circle if the radius is positive? 6) _____
 A) if (radius != 0) System.out.println(radius * radius * 3.14159);
 B) if (radius >= 0) System.out.println(radius * radius * 3.14159);
 C) if (radius <= 0) System.out.println(radius * radius * 3.14159);
 D) if (radius > 0) System.out.println(radius * radius * 3.14159);
- 7) _____ is the code with natural language mixed with Java code. 7) _____
 A) A flowchart diagram B) Java program
 C) A Java statement D) Pseudocode
- 8) Suppose $x = 1$, $y = -1$, and $z = 1$. What is the printout of the following statement? 8) _____
- ```

if (x > 0)
 if (y > 0)
 System.out.println("x > 0 and y > 0");
else if (z > 0)
 System.out.println("x < 0 and z > 0");

```
- A)  $x > 0$  and  $y > 0$ ;                      B)  $x < 0$  and  $z < 0$ ;                      C)  $x < 0$  and  $z > 0$ ;                      D) no printout.

9) Analyze the following code: 9) \_\_\_\_\_

```
boolean even = false;
if (even = true) {
 System.out.println("It is even!");
}
```

- A) The program runs fine, but displays nothing.
- B) The program runs fine and displays It is even!.
- C) The program has a compile error.
- D) The program has a runtime error.

10) Suppose income is 4001, what is the output of the following code: 10) \_\_\_\_\_

```
if (income > 3000) {
 System.out.println("Income is greater than 3000");
}
else if (income > 4000) {
 System.out.println("Income is greater than 4000");
}
```

- A) no output
- B) Income is greater than 3000 followed by Income is greater than 4000
- C) Income is greater than 3000
- D) Income is greater than 4000 followed by Income is greater than 3000
- E) Income is greater than 4000

11) Which of the following is the correct expression that evaluates to true if the number x is between 1 and 100 or the number is negative? 11) \_\_\_\_\_

- A)  $1 < x < 100 \ \&\& \ x < 0$
- B)  $(1 > x > 100) \ || \ (x < 0)$
- C)  $((x < 100) \ \&\& \ (x > 1)) \ || \ (x < 0)$
- D)  $((x < 100) \ \&\& \ (x > 1)) \ \&\& \ (x < 0)$

12) Analyze the following code: 12) \_\_\_\_\_

```
if (x < 100) && (x > 10)
 System.out.println("x is between 10 and 100");
```

- A) The statement has compile errors because  $(x < 100) \ \& \ (x > 10)$  must be enclosed inside parentheses and the `println(...)` statement must be put inside a block.
- B) The statement compiles fine, but has a runtime error.
- C) The statement compiles fine.
- D) The statement has compile errors because  $(x < 100) \ \& \ (x > 10)$  must be enclosed inside parentheses.

13) What is the output of the following code? 13) \_\_\_\_\_

```
char ch = 'F';
if (ch >= 'A' && ch <= 'Z')
 System.out.println(ch);
```

- A) f
- B) F f
- C) F
- D) nothing

14) What is the printout of the following switch statement?

14) \_\_\_\_\_

```
char ch = 'b';

switch (ch) {
 case 'a':
 System.out.print(ch);
 case 'b':
 System.out.print(ch);
 case 'c':
 System.out.print(ch);
 case 'd':
 System.out.print(ch);
}
```

- A) abcd                      B) bbb                      C) bcd                      D) bb                      E) b

15) The following code displays \_\_\_\_\_.

15) \_\_\_\_\_

```
double temperature = 50;

if (temperature >= 100)
 System.out.println("too hot");
else if (temperature <= 40)
 System.out.println("too cold");
else
 System.out.println("just right");
```

- A) just right                      B) too cold  
C) too hot too cold just right                      D) too hot

16) Analyze the following code.

16) \_\_\_\_\_

```
boolean even = false;
if (even) {
 System.out.println("It is even!");
}
```

- A) The code is wrong. You should replace if (even) with if (even = true)  
B) The code displays It is even!  
C) The code is wrong. You should replace if (even) with if (even == true)  
D) The code displays nothing.

17) What is y after the following switch statement is executed?

17) \_\_\_\_\_

```
x = 3;
switch (x + 3) {
 case 6: y = 0;
 case 7: y = 1;
 default: y += 1;
}
```

- A) 1                      B) 3                      C) 4                      D) 2

18) What is the printout of the following switch statement?

18) \_\_\_\_\_

```
char ch = 'a';
switch (ch) {
 case 'a':
 case 'A':
 System.out.print(ch); break;
 case 'b':
 case 'B':
 System.out.print(ch); break;
 case 'c':
 case 'C':
 System.out.print(ch); break;
 case 'd':
 case 'D':
 System.out.print(ch);
}
```

- A) a                      B) abcd                      C) aa                      D) abc                      E) ab

19) Analyze the following program fragment:

19) \_\_\_\_\_

```
int x;
double d = 1.5;
```

```
switch (d) {
 case 1.0: x = 1;
 case 1.5: x = 2;
 case 2.0: x = 3;
}
```

- A) The switch control variable cannot be double.  
B) The program has a compile error because the required break statement is missing in the switch statement.  
C) The program has a compile error because the required default case is missing in the switch statement.  
D) No errors.

20) The order of the precedence (from high to low) of the operators +, \*, &&, ||, & is:

20) \_\_\_\_\_

- A) &, ||, &&, \*, +  
B) \*, +, &, ||, &&  
C) \*, +, &, &&, ||  
D) &&, ||, &, \*, +  
E) \*, +, &&, ||, &

21) Analyze the following fragment.

21) \_\_\_\_\_

```
double x = 0;
double d = 1;
switch (d + 4) {
 case 5: x++;
 case 6: --x;
}
```

- A) The required default keyword is missing in the switch statement.
- B) The required break keyword is missing in the switch statement.
- C) d + 4 should be replaced by 5.
- D) The switch control variable cannot be double.

22) Assume x = 14 and y = 15, Which of the following is true?

22) \_\_\_\_\_

- A) x % 2 == 0 || y % 2 == 0
- B) x % 2 != 0 && y % 2 != 0
- C) x % 2 == 0 && y % 2 == 0
- D) x % 2 == 1 && y % 2 == 0

23) Analyze the following code: (may have multiple answers)

23) \_\_\_\_\_

```
// Enter an integer
Scanner input = new Scanner(System.in);
int number = input.nextInt();
if (number <= 0)
 System.out.println(number);
 System.out.println(number);
```

- A) number is always printed out at least once;
- B) number is printed out once if number is positive.
- C) number is printed out twice if number is negative;
- D) number is printed out twice if number is zero;
- E) All of the above

24) Including a space between the relational operators >=, <=, ==, and != causes a syntax error.

24) \_\_\_\_\_

- A) true
- B) false

25) What is the value of the following expression?

25) \_\_\_\_\_

true || true && false

- A) true
- B) false

26) To check whether a char variable ch is an uppercase letter, you write \_\_\_\_\_.

26) \_\_\_\_\_

- A) (ch >= 'A' || ch <= 'Z')
- B) (ch >= 'A' && ch <= 'Z')
- C) (ch >= 'A' && ch >= 'Z')
- D) ('A' <= ch <= 'Z')