

# TEST BANK



THOMSON  
COURSE TECHNOLOGY

## JAVA™ PROGRAMMING

PROGRAM DESIGN INCLUDING DATA STRUCTURES

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## ch02

### True/False

*Indicate whether the statement is true or false.*

- \_\_\_ 1. The ? is a special symbol in Java.
- \_\_\_ 2. static is a reserved word in Java.
- \_\_\_ 3. The following is a legal Java identifier: !Hello!
- \_\_\_ 4. An identifier can be any sequence of characters and integers.
- \_\_\_ 5. A byte is an example of a boolean data type.
- \_\_\_ 6. The symbol '\*' belongs to the char data type.
- \_\_\_ 7. The data type double is a floating-point data type.
- \_\_\_ 8. The number of significant digits in a float variable is up to 6 or 7.
- \_\_\_ 9. An operator that has only one operand is called a unique operator.
- \_\_\_ 10. Multiplication and division have the same operator precedence.
- \_\_\_ 11. Operators of the same precedence are evaluated from left to right.
- \_\_\_ 12. If a Java arithmetic expression has no parentheses, operators are evaluated from left to right.
- \_\_\_ 13. In Java, the value of the expression  $32 / 5.0$  is 6.4.
- \_\_\_ 14. When evaluating a mixed expression, all integer operands are converted to floating-point numbers with zero decimal part.
- \_\_\_ 15. When a value of one data type is automatically changed to another data type, an implicit type coercion has occurred.
- \_\_\_ 16. Suppose  $x = 6.7$ . The value of the expression  $(\text{int})(x + 0.5)$  is 7.0.
- \_\_\_ 17. Suppose  $x = 15.7$ . The output of the statement `-- System.out.println((int)(x) / 2);` is 7.
- \_\_\_ 18. Suppose  $x = 18.9$ . The output of the statement `-- System.out.println((int)(x) % 3);` is 1.
- \_\_\_ 19. The null string contains one character.
- \_\_\_ 20. A string is a sequence of zero or more characters.
- \_\_\_ 21. The value of a variable cannot change during program execution.

- \_\_\_ 22. If  $a = 4$ ; and  $b = 3$ ; then after the statement  $a = b$ ; executes the value of  $b$  is erased.
- \_\_\_ 23. Java automatically initializes all variables.
- \_\_\_ 24. Suppose `console` is a `Scanner` object initialized with the standard input device. The expression `console.nextInt()`; is used to read one int value and the expression `console.nextDouble()`; is used to read two int values.
- \_\_\_ 25. Suppose `console` is a `Scanner` object initialized with the standard input device and  $x$  and  $y$  are int variables. Consider the following statements:
- ```
x = console.nextInt();
y = console.nextInt();
```
- These statements require the value of  $x$  and  $y$  to be input on separate lines.
- \_\_\_ 26. The class `Scanner` is contained in the package `java.io`.
- \_\_\_ 27. The statement `count = count + 1`; is equivalent to `count++`;
- \_\_\_ 28. If `++x` is used in an expression, first the expression is evaluated, then the value of  $x$  is incremented by 1.
- \_\_\_ 29. Suppose that `count` is an int variable. The statements `--count`; and `count--`; together decrement the value of `count` by 2.
- \_\_\_ 30. Suppose  $x = 8$ . After the execution of the statement `y = x++`;  $y$  is 9 and  $x$  is 8.
- \_\_\_ 31. Suppose  $a = 4$ . After the execution of the statement `b = ++a`;  $b$  is 4 and  $a$  is 5.
- \_\_\_ 32. Suppose  $a = 5$ . After the execution of the statement `++a`; the value of  $a$  is 6.
- \_\_\_ 33. Suppose  $a = 15$ . After the execution of the statement `--a`; the value of  $a$  is 13.
- \_\_\_ 34. Suppose that `alpha` and `beta` are int variables. The statement `alpha = beta++`; is equivalent to the statement `alpha = ++beta`;
- \_\_\_ 35. Suppose that `alpha` and `beta` are int variables. The statement `alpha = --beta`; is equivalent to the statement `alpha = 1 - beta`; while the statement `alpha = beta--`; is equivalent to the statement `alpha = beta - 1`;
- \_\_\_ 36. The operator `+` can be used to concatenate two strings, as well as a string and a numeric value or a character.
- \_\_\_ 37. Both `System.out.println` and `System.out.print` can be used to output a string on the standard output device.
- \_\_\_ 38. The expression `System.out.println()`; inserts the newline character at the end of the line.
- \_\_\_ 39. `\n` (Newline) moves the insertion point to the beginning of the next line.

- \_\_\_ 40. `\r` (Return) moves the insertion point to the beginning of the next line.
- \_\_\_ 41. A package is a collection of related classes.
- \_\_\_ 42. The Java source file must have a `.class` extension.
- \_\_\_ 43. Executable statements perform calculations, manipulate data, create output, and accept input.
- \_\_\_ 44. A comma is also called a statement terminator.
- \_\_\_ 45. The pair of characters `//` is used for single line comments.
- \_\_\_ 46. Multi line comments are enclosed between `/*` and `/*`.
- \_\_\_ 47. The following two statements are equivalent.
- a. `x *= y + 2;`
  - b. `x = x * y + 2;`
- \_\_\_ 48. Suppose that `sum` is an `int` variable. The statement
- ```
sum += 7;
```
- is equivalent to the statement
- ```
sum = sum + 7;
```
- \_\_\_ 49. Suppose that `product` is a `double` variable. The statement `prod *= 0;` is equivalent to the statement `prod = 0;`.

### Multiple Choice

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_ 50. The \_\_\_ rules of a programming language tell you which statements are legal, or accepted by the programming language.
- a. semantic
  - b. logical
  - c. syntax
  - d. grammatical
- \_\_\_ 51. Which of the following is a reserved word in C++?
- a. `char`
  - b. `Char`
  - c. `CHAR`
  - d. None of these
- \_\_\_ 52. Which of the following is NOT a special symbol in Java?
- a. `+`
  - b. `#`
  - c. `!=`
  - d. `?`
- \_\_\_ 53. Which of the following is NOT a reserved word in Java?
- a. `int`
  - b. `public`
  - c. `static`
  - d. `num`
- \_\_\_ 54. Which of the following is a valid Java identifier?

- a. `!Stop_and_go` c. `_Hello_There`  
b. `#salaryForTheMonth` d. `myNumber!`
- \_\_\_ 55. Which of the following is a legal identifier?  
a. `program!` c. `!program`  
b. `program_1` d. `program 1`
- \_\_\_ 56. All of the following are examples of integral data types EXCEPT \_\_\_\_\_.  
a. `int` c. `double`  
b. `char` d. `byte`
- \_\_\_ 57. Which of the following is a valid `int` value?  
a. `46,259` c. `462.59`  
b. `46259` d. None of these
- \_\_\_ 58. What is the floating point notation for `25.611`?  
a. `2.5E1` c. `2.561100E1`  
b. `2.6` d. `256.1100E1`
- \_\_\_ 59. The memory allocated for a float value is \_\_\_\_\_.  
a. 2 bytes c. 8 bytes  
b. 4 bytes d. 32 bytes
- \_\_\_ 60. The value of the expression `44 / 10` is \_\_\_\_\_.  
a. `0.4` c. `4.0`  
b. `4` d. `4.4`
- \_\_\_ 61. The value of the expression `17 % 7` is \_\_\_\_\_.  
a. `1` c. `3`  
b. `2` d. None of these
- \_\_\_ 62. Suppose that `x`, `y` and `z` are `int` variables. The expression `x(y+z)` in Java is written as \_\_\_\_\_.  
a. `x * y + z` c. `y + x * z`  
b. `x * (y + z)` d. None of these
- \_\_\_ 63. Suppose that `x`, `y`, `z`, and `w` are `int` variables. The expression `x(y-z)/w` in Java is written as \_\_\_\_\_.  
a. `x * y - z / w` c. `x * (y - z) / w`  
b. `x * y - x * z / w` d. `x (y - z) / w`
- \_\_\_ 64. The value of `10 % 3` is \_\_\_\_\_.  
a. `0` c. `9`  
b. `3` d. `1`
- \_\_\_ 65. Operators that have two operands are called \_\_\_\_\_.  
a. unary operands c. operators  
b. binary operands d. expressions
- \_\_\_ 66. The value of the expression `1 + 5 % 3` is \_\_\_\_\_.  
a. `0` c. `3`  
b. `2` d. `4`
- \_\_\_ 67. The value of the expression `26 - 14 % 3 + 1` is \_\_\_\_\_.  
a. `0` c. `24`  
b. `1` d. `25`

- \_\_\_ 68. The value of the expression  $26 + 14 / 3 + 1$  is \_\_\_\_.
- a. 10
  - b. 14
  - c. 29
  - d. 31
- \_\_\_ 69. The value of the expression  $36 - 15 \% 2.0 + 1$  is \_\_\_\_.
- a. 36
  - b. 36.0
  - c. 37
  - d. This is an illegal Java expression
- \_\_\_ 70. The expression `(int)9.9` evaluates to \_\_\_\_.
- a. 9
  - b. 10
  - c. 9.9
  - d. 9.0
- \_\_\_ 71. The expression `(double)(6 + 2)` evaluates to \_\_\_\_.
- a. 8
  - b. 8.0
  - c. 7
  - d. 10
- \_\_\_ 72. The expression `(int)6.9 + (int)7.9` evaluates to \_\_\_\_.
- a. 14.8
  - b. 14
  - c. 13
  - d. 15
- \_\_\_ 73. Suppose that x is an int variable. What is the value of x after the following statement executes: `x = 15 + (int)(10.5) / 2;`?
- a. 20
  - b. 20.25
  - c. 21
  - d. 22
- \_\_\_ 74. Suppose that alpha is a double variable. What is the value of alpha after the following statement executes: `alpha = 11.5 + (double)(15) / 2;`?
- a. 18.0
  - b. 18.5
  - c. 19.0
  - d. None of these
- \_\_\_ 75. The length of the string "computer science" is \_\_\_\_.
- a. 14
  - b. 15
  - c. 16
  - d. 18
- \_\_\_ 76. What type of Java statement(s) stores a value in a variable?
- a. input
  - b. output
  - c. assignment
  - d. Both an input statement and an assignment statement
- \_\_\_ 77. Which of the following statements about a named constant is NOT true?
- a. Its content cannot change during program execution.
  - b. Its value can be changed during program execution.
  - c. It is a memory location.
  - d. It is declared using the reserved word final.
- \_\_\_ 78. Suppose that x and y are int variables and `x = 10` and `y = 20`. After the statement: `x = x + y;` executes, the value of x is \_\_\_\_.
- a. 10
  - b. 20
  - c. 30
  - d. None of these
- \_\_\_ 79. Given
- ```
int    one;
```

```
double two;
boolean four;
```

which of the following assignment statements are valid?

- (i) `one = 7 + 3 % 4;`
- (ii) `2.3 + 3.5 = two;`
- (iii) `four = (2 <= 3);`

- a. Only (i) is valid
- b. (i) and (ii) are valid
- c. (ii) and (iii) are valid
- d. (i) and (iii) are valid

\_\_\_ 80. Suppose that alpha and beta are int variables. The statement `alpha = --beta;` is equivalent to the statement(s) \_\_\_.

- a. `alpha = 1 - beta;`
- b. `alpha = beta - 1;`
- c. `beta = beta - 1;`  
`alpha = beta;`
- d. None of these

\_\_\_ 81. Suppose that alpha and beta are int variables. The statement `alpha = beta--;` is equivalent to the statement(s) \_\_\_.

- a. `alpha = 1 - beta;`
- b. `alpha = beta - 1;`
- c. `alpha = beta;`  
`beta = beta - 1;`
- d. None of these

\_\_\_ 82. Suppose that alpha and beta are int variables. The statement `alpha = beta++;` is equivalent to the statement(s) \_\_\_.

- a. `alpha = 1 + beta;`
- b. `alpha = alpha + beta;`
- c. `alpha = beta;`  
`beta = beta + 1;`
- d. None of these

\_\_\_ 83. Suppose that alpha and beta are int variables. The statement `alpha = ++beta;` is equivalent to the statement(s) \_\_\_.

- a. `beta = beta + 1;`  
`alpha = beta;`
- b. `alpha = beta + 1;`
- c. `alpha = alpha + beta;`
- d. None of these

\_\_\_ 84. Consider the following statements.

```
String str;
int num1, num2;
num1 = 13;
num2 = 24;
str = "The sum = " + num1 + num2;
```

What is the final value stored in str?

- a. The sum = 37
- b. The sum = 13 24
- c. The sum = 13 + 24
- d. The sum = 1324

\_\_\_ 85. What is the output of the following statement?

```
System.out.println("Welcome \nHome");
```

- a. WelcomeHome
- b. Welcome Home
- c. Welcome  
Home
- d. Welcome \n Home

\_\_\_ 86. Suppose that  $x = 5$  and  $y = 6$ . What is the output of the following Java statement?

```
System.out.println("Sum of " + x + " and " + y + " is "
    + (x + y));
```

- a. Sum of 5 and 6 is 11
- b. Sum of x and y is 11
- c. Sum of x and y is  $x + y$
- d. None of these

\_\_\_ 87. Suppose that  $x = 5$  and  $y = 6$ . What is the output of the following Java statement?

```
System.out.println("Sum of " + x + " and " + y + " is "
    + x + y);
```

- a. Sum of 5 and 6 is 11
- b. Sum of 5 and 6 is 56
- c. Sum of x and y is 11
- d. None of these

\_\_\_ 88. Which of the following is the new line character?

- a. \r
- b. \n
- c. \l
- d. \b

\_\_\_ 89. Consider the following code.

```
// Insertion Point 1
public class CircleArea
{
    // Insertion Point 2
    static final float PI = 3.14

    public static void main(String[]args)
    {
        //Insertion Point 3

        float r = 2.0;
        float area;
        area = PI * r * r;
        System.out.println("Area = " + area);
    }
    // Insertion Point 4
}
```

In this code, where do the import statements belong?

- a. Insertion Point 1
- b. Insertion Point 2
- c. Insertion Point 3
- d. Insertion Point 4

\_\_\_ 90. Which of the following is the correct syntax for commenting in Java?

- a. # Enter Comments Here
- b. <!-- Enter Comments Here -->
- c. /\* Enter Comments Here\*/
- d. \*\* Enter Comments Here \*\*

\_\_\_ 91. \_\_\_ are executable statements that inform the user what to do.

- a. Variables
- b. Prompt lines
- c. Named constants
- d. Expressions



\_\_\_ 92. The declaration `int a, b, c;` is equivalent to which of the following?

- a. `inta, b, c;`
- b. `int a,b,c;`
- c. `int abc;`
- d. `int a b c;`

\_\_\_ 93. Suppose  $x = 2$  and  $y = 3$ . What is the value of  $y$  after the following statement executes?

`x *= y;`

- a. 5
- b. 3
- c. 6
- d. 2

\_\_\_ 94. Suppose  $x = 2$  and  $y = 3$ . What is the value of  $x$  after the following statement executes?

`x *= y;`

- a. 3
- b. 5
- c. 2
- d. 6

**ch02**  
**Answer Section**

**TRUE/FALSE**

1.	ANS: T	PTS: 1	REF: 30
2.	ANS: T	PTS: 1	REF: 30
3.	ANS: F	PTS: 1	REF: 30
4.	ANS: F	PTS: 1	REF: 30
5.	ANS: F	PTS: 1	REF: 32   33
6.	ANS: T	PTS: 1	REF: 33
7.	ANS: T	PTS: 1	REF: 35
8.	ANS: T	PTS: 1	REF: 36
9.	ANS: F	PTS: 1	REF: 37
10.	ANS: T	PTS: 1	REF: 40
11.	ANS: T	PTS: 1	REF: 40
12.	ANS: F	PTS: 1	REF: 40
13.	ANS: T	PTS: 1	REF: 42
14.	ANS: F	PTS: 1	REF: 42
15.	ANS: T	PTS: 1	REF: 44
16.	ANS: T	PTS: 1	REF: 44
17.	ANS: T	PTS: 1	REF: 44
18.	ANS: F	PTS: 1	REF: 44
19.	ANS: F	PTS: 1	REF: 46
20.	ANS: T	PTS: 1	REF: 46
21.	ANS: F	PTS: 1	REF: 49
22.	ANS: F	PTS: 1	REF: 50
23.	ANS: F	PTS: 1	REF: 53
24.	ANS: F	PTS: 1	REF: 54
25.	ANS: F	PTS: 1	REF: 54   56
26.	ANS: F	PTS: 1	REF: 56   76
27.	ANS: T	PTS: 1	REF: 64   65
28.	ANS: F	PTS: 1	REF: 65
29.	ANS: T	PTS: 1	REF: 64   65
30.	ANS: F	PTS: 1	REF: 64   65
31.	ANS: F	PTS: 1	REF: 64   65
32.	ANS: T	PTS: 1	REF: 64   65
33.	ANS: F	PTS: 1	REF: 64   65
34.	ANS: F	PTS: 1	REF: 64
35.	ANS: F	PTS: 1	REF: 64
36.	ANS: T	PTS: 1	REF: 66
37.	ANS: T	PTS: 1	REF: 69
38.	ANS: T	PTS: 1	REF: 69
39.	ANS: T	PTS: 1	REF: 70   74
40.	ANS: F	PTS: 1	REF: 74
41.	ANS: T	PTS: 1	REF: 76

42.	ANS: F	PTS: 1	REF: 78
43.	ANS: T	PTS: 1	REF: 78
44.	ANS: F	PTS: 1	REF: 82
45.	ANS: T	PTS: 1	REF: 84
46.	ANS: F	PTS: 1	REF: 84
47.	ANS: F	PTS: 1	REF: 88
48.	ANS: T	PTS: 1	REF: 87
49.	ANS: T	PTS: 1	REF: 87

### MULTIPLE CHOICE

50.	ANS: C	PTS: 1	REF: 29
51.	ANS: A	PTS: 1	REF: 30
52.	ANS: B	PTS: 1	REF: 30
53.	ANS: D	PTS: 1	REF: 30
54.	ANS: C	PTS: 1	REF: 30
55.	ANS: B	PTS: 1	REF: 30
56.	ANS: C	PTS: 1	REF: 32
57.	ANS: B	PTS: 1	REF: 33
58.	ANS: C	PTS: 1	REF: 35
59.	ANS: B	PTS: 1	REF: 35
60.	ANS: B	PTS: 1	REF: 37
61.	ANS: C	PTS: 1	REF: 37
62.	ANS: B	PTS: 1	REF: 40
63.	ANS: C	PTS: 1	REF: 40
64.	ANS: D	PTS: 1	REF: 37   38
65.	ANS: B	PTS: 1	REF: 37
66.	ANS: C	PTS: 1	REF: 40
67.	ANS: D	PTS: 1	REF: 40
68.	ANS: D	PTS: 1	REF: 40
69.	ANS: B	PTS: 1	REF: 42   43
70.	ANS: A	PTS: 1	REF: 44
71.	ANS: B	PTS: 1	REF: 44
72.	ANS: C	PTS: 1	REF: 44
73.	ANS: A	PTS: 1	REF: 44
74.	ANS: C	PTS: 1	REF: 44
75.	ANS: C	PTS: 1	REF: 46
76.	ANS: D	PTS: 1	REF: 50
77.	ANS: B	PTS: 1	REF: 47
78.	ANS: C	PTS: 1	REF: 50
79.	ANS: A	PTS: 1	REF: 50
80.	ANS: C	PTS: 1	REF: 65
81.	ANS: B	PTS: 1	REF: 65
82.	ANS: C	PTS: 1	REF: 64
83.	ANS: B	PTS: 1	REF: 64
84.	ANS: D	PTS: 1	REF: 67

85.	ANS: C	PTS: 1	REF: 70
86.	ANS: A	PTS: 1	REF: 67   70
87.	ANS: B	PTS: 1	REF: 67   70
88.	ANS: B	PTS: 1	REF: 74
89.	ANS: A	PTS: 1	REF: 79
90.	ANS: C	PTS: 1	REF: 84
91.	ANS: B	PTS: 1	REF: 84
92.	ANS: B	PTS: 1	REF: 85
93.	ANS: B	PTS: 1	REF: 87
94.	ANS: D	PTS: 1	REF: 87