1. _____ is the code with natural language mixed with Java code.

a. Java program

b. A Java statement

c. Pseudocode

d. A flowchart diagram

2. What is the exact output of the following code?

```
double area = 3.5;
System.out.print("area");
System.out.print(area);
```

a. 3.53.5

b. 3.5 3.5

c. area3.5

d. area 3.5

3. Suppose a Scanner object is created as follows, what method do you use to read a real number?

```
Scanner input = new Scanner(System.in);
```

a. input.nextDouble();

b. input.nextdouble();

c. input.double();

d. input.Double();

4. The following code fragment reads in two numbers:

```
Scanner input = new Scanner(System.in);
int i = input.nextInt();
double d = input.nextDouble();
```

What is the incorrect way to enter these two numbers?

a. Enter an integer, a space, a double value, and then the Enter key.

b. Enter an integer, two spaces, a double value, and then the Enter key.

c. Enter an integer, an Enter key, a double value, and then the Enter key.

d. Enter a numeric value with a decimal point, a space, an integer, and then the Enter key.

5. If you enter 1 2 3, when you run this program, what will be the output?

```
import java.util.Scanner;
public class Test1 {
  public static void main(String[] args) {
    Scanner input = new Scanner(System.in);
    System.out.print("Enter three numbers: ");
    double number1 = input.nextDouble();
    double number2 = input.nextDouble();
    double number3 = input.nextDouble();
    // Compute average
    double average = (number1 + number2 + number3) / 3;
    // Display result
    System.out.println(average);
  }
}
```

a. 1.0

b. 2.0

c. 3.0

d. 4.0

6. Every letter in a Java keyword is in lowercase?

a. true

b. false

7. Which of the following is a valid identifier?

a. $343

b. class

c. 9X

d. 8+9

e. radius

8. Which of the following are correct names for variables according to Java naming conventions?

a. radius

b. Radius

c. RADIUS

d. findArea

e. FindArea

9. Which of the following are correct ways to declare variables?

a. int length; int width;

b. int length, width;

c. int length; width;

d. int length, int width;

10. _____ is the Java assignment operator.

a. ==

b. :=

c. =

d. =:

11. To assign a value 1 to variable x, you write

a. 1 = x;

b. x = 1;

c. x := 1;

d. 1 := x;

e. x == 1;

12. Which of the following assignment statements is incorrect?

a. i = j = k = 1;

b. i = 1; j = 1; k = 1;

c. i = 1 = j = 1 = k = 1;

d. i == j == k == 1;

13. To declare a constant MAX_LENGTH inside a method with value 99.98, you write

a. final MAX_LENGTH = 99.98;

b. final float MAX_LENGTH = 99.98;

c. double MAX_LENGTH = 99.98;

d. final double MAX_LENGTH = 99.98;

14. Which of the following is a constant, according to Java naming conventions?

a. MAX_VALUE

b. Test

c. read

d. ReadInt

e. COUNT

15. To improve readability and maintainability, you should declare _____ instead of using literal values such as 3.14159.

a. variables

b. methods

c. constants

d. classes

16. According to Java naming convention, which of the following names can be variables?

a. FindArea

b. findArea

c. totalLength

d. TOTAL_LENGTH

e. class

17. Which of these data types requires the most amount of memory?

a. long

b. int

c. short

d. byte

18. When assigning a literal to a variable of the byte type, if the literal is too large to be stored as a byte value, it _____.

a. causes overflow

b. causes underflow

c. causes no error

d. cannot happen in Java

e. receives a compile error

19. What is the result of 45 / 4?

a. 10

b. 11

c. 11.25

d. 12

20. Which of the following expression results in a value 1?

a. 2 % 1

b. 15 % 4

c. 25 % 5

d. 37 % 6

21. 25 % 1 is _____

a. 1

b. 2

c. 3

d. 4

e. 0

22. -25 % 5 is _____

a. 1

b. 2

c. 3

d. 4

e. 0

23. 24 % 5 is _____

a. 1

b. 2

c. 3

d. 4

e. 0

24. -24 % 5 is _____

a. -1

b. -2

c. -3

d. -4

e. 0

25. -24 % -5 is _____

a. 3

b. -3

c. 4

d. -4

e. 0

26. How do you write 2.5 ^ 3.1 in Java?

a. 2.5 * 3.1

b. Math.pow(2.5, 3.1)

c. Math.pow(3.1, 2.5)

d. 2.5 ** 3.1

e. 3.1 ** 2.5

27. Math.pow(2, 3) returns _____.

a. 9

b. 8

c. 9.0

d. 8.0

28. Math.pow(4, 1 / 2) returns _____.

a. 2

b. 2.0

c. 0

d. 1.0

e. 1

29. Math.pow(4, 1.0 / 2) returns _____.

a. 2

b. 2.0

c. 0

d. 1.0

e. 1

30. The _____ method returns a raised to the power of b.

a. Math.power(a, b)

b. Math.exponent(a, b)

c. Math.pow(a, b)

d. Math.pow(b, a)

31. To declare an int variable number with initial value 2, you write

a. int number = 2L;

b. int number = 2l;

c. int number = 2;

d. int number = 2.0;

32. Analyze the following code.

```
public class Test {
```

```
  public static void main(String[] args) {
    int month = 09;
    System.out.println("month is " + month);
  }
}
```

a. The program displays month is 09.

b. The program displays month is 9.

c. The program displays month is 9.0.

d. The program has a syntax error, because 09 is an incorrect literal value.

33. Which of the following is incorrect?

a. 1_2

b. 0.4_56

c. 1_200_229

d. _4544

34. Which of the following are the same as 1545.534?

a. 1.545534e+3

b. 0.1545534e+4

c. 1545534.0e-3

d. 154553.4e-2

35. Which of the following is incorrect?

a. int x = 9;

b. long x = 9;

c. float x = 1.0;

d. double x = 1.0;

36. The expression 4 + 20 / (3 - 1) * 2 is evaluated to

a. 4

b. 20

c. 24

d. 9

e. 25

37. The System.currentTimeMillis() returns _____ .

a. the current time.

b. the current time in milliseconds.

c. the current time in milliseconds since midnight.

d. the current time in milliseconds since midnight, January 1, 1970.

e. the current time in milliseconds since midnight, January 1, 1970 GMT (the Unix time).

38. To obtain the current second, use _____.

a. System.currentTimeMillis() % 3600

b. System.currentTimeMillis() % 60

c. System.currentTimeMillis() / 1000 % 60

d. System.currentTimeMillis() / 1000 / 60 % 60

e. System.currentTimeMillis() / 1000 / 60 / 60 % 24

39. To obtain the current minute, use _____.

a. System.currentTimeMillis() % 3600

b. System.currentTimeMillis() % 60

c. System.currentTimeMillis() / 1000 % 60

d. System.currentTimeMillis() / 1000 / 60 % 60

e. System.currentTimeMillis() / 1000 / 60 / 60 % 24

40. To obtain the current hour in UTC, use _____.

a. System.currentTimeMillis() % 3600

b. System.currentTimeMillis() % 60

c. System.currentTimeMillis() / 1000 % 60

d. System.currentTimeMillis() / 1000 / 60 % 60

e. System.currentTimeMillis() / 1000 / 60 / 60 % 24

41. To add a value 1 to variable x, you write

a. 1 + x = x;

b. x += 1;

c. x := 1;

d. x = x + 1;

e. x = 1 + x;

42. To add number to sum, you write (Note: Java is case-sensitive)

a. number += sum;

b. number = sum + number;

c. sum = Number + sum;

d. sum += number;

e. sum = sum + number;

43. Suppose x is 1. What is x after x += 2?

a. 0

b. 1

c. 2

d. 3

e. 4

44. Suppose x is 1. What is x after x -= 1?

a. 0

b. 1

c. 2

d. -1

e. -2

45. What is x after the following statements?

```
int x = 2;
int y = 1;
x *= y + 1;
```

a. x is 1.

b. x is 2.

c. x is 3.

d. x is 4.

46. What is x after the following statements?

```
int x = 1;
x *= x + 1;
```

a. x is 1.

b. x is 2.

c. x is 3.

d. x is 4.

47. Which of the following statements are the same?

(A) x -= x + 4

(B) x = x + 4 - x

(C) x = x - (x + 4)

a. (A) and (B) are the same

b. (A) and (C) are the same

c. (B) and (C) are the same

d. (A), (B), and (C) are the same

48. Are the following four statements equivalent?

```
number += 1;
number = number + 1;
number++;
++number;
```

a. Yes

b. No

49. What is i printed?

```
public class Test {
  public static void main(String[] args) {
    int j = 0;
    int i = ++j + j * 5;
    System.out.println("What is i? " + i);
  }
}
```

a. 0

b. 1

c. 5

d. 6

50. What is i printed in the following code?

```
public class Test {
  public static void main(String[] args) {
    int j = 0;
    int i = j++ + j * 5;
    System.out.println("What is i? " + i);
  }
}
```

a. 0

b. 1

c. 5

d. 6

51. What is y displayed in the following code?

```
public class Test {
  public static void main(String[] args) {
    int x = 1;
    int y = x++ + x;
    System.out.println("y is " + y);
  }
}
```

a. y is 1.

b. y is 2.

c. y is 3.

d. y is 4.

52. What is y displayed?

```
public class Test {
  public static void main(String[] args) {
    int x = 1;
    int y = x + x++;
    System.out.println("y is " + y);
  }
}
```

a. y is 1.

b. y is 2.

c. y is 3.

d. y is 4.

53. To assign a double variable d to a float variable x, you write

a. x = (long)d

b. x = (int)d;

c. x = d;

d. x = (float)d;

54. Which of the following expressions will yield 0.5?

a. 1 / 2

b. 1.0 / 2

c. (double) (1 / 2)

d. (double) 1 / 2

e. 1 / 2.0

55. What is the output of the following code:

```
double x = 5.5;
int y = (int)x;
```

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

a. x is 5 and y is 6

b. x is 6.0 and y is 6.0

c. x is 6 and y is 6

d. x is 5.5 and y is 5

e. x is 5.5 and y is 5.0

56. Which of the following assignment statements is illegal?

a. float f = -34;

b. int t = 23;

c. short s = 10;

d. int t = (int)false;

e. int t = 4.5;

57. What is the value of (double)5/2?

a. 2

b. 2.5

c. 3

d. 2.0

e. 3.0

58. What is the value of (double)(5/2)?

a. 2

b. 2.5

c. 3

d. 2.0

e. 3.0

59. Which of the following expression results in 45.37?

a. (int)(45.378 * 100) / 100

b. (int)(45.378 * 100) / 100.0

c. (int)(45.378 * 100 / 100)

d. (int)(45.378) * 100 / 100.0

60. The expression (int)(76.0252175 * 100) / 100 evaluates to _____.

a. 76.02

b. 76

c. 76.0252175

d. 76.03

61. If you attempt to add an int, a byte, a long, and a double, the result will be a(n) _____ value.

a. byte

b. int

c. long

d. double

62. _____ is a formal process that seeks to understand the problem and document in detail what the software system needs to do.

a. Requirements specification

b. Analysis

c. Design

d. Implementation

e. Testing

63. _____ seeks to analyze the data flow and to identify the system's input and output. When you do analysis, it helps to identify what the output is first, and then figure out what input data you need in order to produce the output.

a. Requirements specification

b. Analysis

c. Design

d. Implementation

e. Testing

64. Analyze the following code:

```
public class Test {
  public static void main(String[] args) {
    int n = 10000 * 10000 * 10000;
    System.out.println("n is " + n);
  }
}
```

a. The program displays n is 1000000000000.

b. The result of 10000 * 10000 * 10000 is too large to be stored in an int variable n. This causes an overflow and the program is aborted.

c. The result of 10000 * 10000 * 10000 is too large to be stored in an int variable n. This causes an overflow and the program continues to execute because Java does not report errors on overflow.

d. The result of 10000 * 10000 * 10000 is too large to be stored in an int variable n. This causes an underflow and the program is aborted.

e. The result of 10000 * 10000 * 10000 is too large to be stored in an int variable n. This causes an underflow and the program continues to execute because Java does not report errors on underflow.