1. Suppose your method does not return any value, which of the following keywords can be used as a return type?

a. void

b. int

c. double

d. public

e. None of the above

2. The signature of a method consists of _____.

a. method name

b. method name and parameter list

c. return type, method name, and parameter list

d. parameter list

3. All Java applications must have a method _____.

a. public static Main(String[] args)

b. public static Main(String args[])

c. public static void main(String[] args)

d. public void main(String[] args)

e. public static main(String[] args)

4. Arguments to methods always appear within _____.

a. brackets

b. parentheses

c. curly braces

d. quotation marks

5. Does the return statement in the following method cause compile errors?

```
public static void main(String[] args) {
  int max = 0;
```

```
 if (max != 0)
   System.out.println(max);
 else
   return;
}
```

a. Yes

b. No

6. Does the method call in the following method cause compile errors?

```
public static void main(String[] args) {
 Math.pow(2, 4);
}
```

a. Yes

b. No

7. Each time a method is invoked, the system stores parameters and local variables in an area of memory, known as _____, which stores elements in last-in first-out fashion.

a. a heap

b. storage area

c. a stack

d. an array

8. Which of the following should be defined as a void method?

a. Write a method that prints integers from 1 to 100.

b. Write a method that returns a random integer from 1 to 100.

c. Write a method that checks whether a number is from 1 to 100.

d. Write a method that converts an uppercase letter to lowercase.

9. You should fill in the blank in the following code with _____.

```
public class Test {
  public static void main(String[] args) {
    System.out.print("The grade is ");
    printGrade(78.5);

    System.out.print("The grade is ");
    printGrade(59.5);
  }
  public static _____ printGrade(double score) {
    if (score >= 90.0) {
      System.out.println('A');
    }
    else if (score >= 80.0) {
      System.out.println('B');
    }
    else if (score >= 70.0) {
      System.out.println('C');
    }
    else if (score >= 60.0) {
      System.out.println('D');
    }
    else {
      System.out.println('F');
    }
  }
}
```

a. int

b. double

c. boolean

d. char

e. void

10. You should fill in the blank in the following code with _____.

```
public class Test {
  public static void main(String[] args) {
    System.out.print("The grade is " + getGrade(78.5));
    System.out.print("\nThe grade is " + getGrade(59.5));
  }
  public static _________ getGrade(double score) {
    if (score >= 90.0)
      return 'A';
    else if (score >= 80.0)
      return 'B';
    else if (score >= 70.0)
      return 'C';
    else if (score >= 60.0)
      return 'D';
    else
      return 'F';
  }
}
```

a. int

b. double

c. boolean

d. char

e. void

11. Consider the following incomplete code:

```
public class Test {
  public static void main(String[] args) {
    System.out.println(f(5));
  }
    public static int f(int number) {
    // Missing body
  }
}
```

The missing method body should be _____.

a. return "number";

b. System.out.println(number);

c. System.out.println("number");

d. return number;

12. When you invoke a method with a parameter, the value of the argument is passed to the parameter. This is referred to as _____.

a. method invocation

b. pass by value

c. pass by reference

d. pass by name

13. Given the following method, what is the output of the call nPrint('a', 4)?

```
static void nPrint(String message, int n) {
  while (n > 0) {
    System.out.print(message);
    n--;
```

```
  }
}
```

a. aaaaa

b. aaaa

c. aaa

d. invalid call

14. Given the following method

```
static void nPrint(String message, int n) {
  while (n > 0) {
    System.out.print(message);
    n--;
  }
}
```

What is k after invoking nPrint("A message", k)?

```
int k = 2;
nPrint("A message", k);
```

a. 0

b. 1

c. 2

d. 3

15. Analyze the following code:

```
public class Test {
  public static void main(String[] args) {
    System.out.println(xMethod(5, 500L));
  }
  public static int xMethod(int n, long l) {
    System.out.println("int, long");
```

```
    return n;
  }

  public static long xMethod(long n, long l) {
    System.out.println("long, long");
    return n;
  }
}
```

a. The program displays int, long followed by 5.

b. The program displays long, long followed by 5.

c. The program runs fine but displays things other than 5.

d. The program does not compile because the compiler cannot distinguish which xmethod to invoke.

16. Analyze the following code:

```
class Test {
  public static void main(String[] args) {
    System.out.println(xmethod(5));
  }
  public static int xmethod(int n, long t) {
    System.out.println("int");
    return n;
  }
  public static long xmethod(long n) {
    System.out.println("long");
    return n;
  }
}
```

a. The program displays int followed by 5.

b. The program displays long followed by 5.

c. The program runs fine but displays things other than 5.

d. The program does not compile because the compiler cannot distinguish which xmethod to invoke.

17. Analyze the following code.

```
public class Test {
  public static void main(String[] args)  {
    System.out.println(max(1, 2));
  }
  public static double max(int num1, double num2) {
    System.out.println("max(int, double) is invoked");
    if (num1 > num2)
      return num1;
    else
      return num2;
  }
    public static double max(double num1, int num2) {
    System.out.println("max(double, int) is invoked");
    if (num1 > num2)
      return num1;
    else
      return num2;
  }
}
```

a. The program cannot compile because you cannot have the print statement in a non-void method.

b. The program cannot compile because the compiler cannot determine which max method should be invoked.

c. The program runs and prints 2 followed by "max(int, double)" is invoked.

d. The program runs and prints 2 followed by "max(double, int)" is invoked.

e. The program runs and prints "max(int, double) is invoked" followed by 2.

18. Analyze the following code.

```
public class Test {
  public static void main(String[] args)  {
    System.out.println(m(2));
  }

  public static int m(int num) {
    return num;
  }
  public static void m(int num) {
    System.out.println(num);
  }
}
```

a. The program has a compile error because the two methods m have the same signature.

b. The program has a compile error because the second m method is defined, but not invoked in the main method.

c. The program runs and prints 2 once.

d. The program runs and prints 2 twice.

19. A variable defined inside a method is referred to as _____.

a. a global variable

b. a method variable

c. a block variable

d. a local variable

20. What is k after the following block executes?

```
{
  int k = 2;
  nPrint("A message", k);
}
System.out.println(k);
```

a. 0

b. 1

c. 2

d. k is not defined outside the block. So, the program has a compile error

21. (int)(Math.random() * (65535 + 1)) returns a random number _____.

a. between 1 and 65536

b. between 1 and 65535

c. between 0 and 65535

d. between 0 and 65536

22. (int)('a' + Math.random() * ('z' - 'a' + 1)) returns a random number _____.

a. between 0 and (int)'z'

b. between (int)'a' and (int)'z'

c. between 'a' and 'z'

d. between 'a' and 'y'

23. (char)('a' + Math.random() * ('z' - 'a' + 1)) returns a random character _____.

a. between 'a' and 'z'

b. between 'a' and 'y'

c. between 'b' and 'z'

d. between 'b' and 'y'

24. Which of the following is the best for generating random integer 0 or 1?

a. (int)Math.random()

b. (int)Math.random() + 1

c. (int)(Math.random() + 0.5)

d. (int)(Math.random() + 0.2)

e. (int)(Math.random() + 0.8)

25. The client can use a method without knowing how it is implemented. The details of the implementation are encapsulated in the method and hidden from the client who invokes the method. This is known as _____.

a. information hiding

b. encapsulation

c. method hiding

d. simplifying method

26. _____ is to implement one method in the structure chart at a time from the top to the bottom.

a. Bottom-up approach

b. Top-down approach

c. Bottom-up and top-down approach

d. Stepwise refinement

27. _____ is a simple but incomplete version of a method.

a. A stub

b. A main method

c. A non-main method

d. A method developed using top-down approach