# Day 4 ASSESSMENT

Name: Nikhil k

1. What is the primary reason to use functions in programming?
   1. Increase execution time
   2. Reduce memory usage
   3. Improve modularity and reusability
   4. Increase code repetition

2. Which Java keyword is used when a function returns nothing?
   1. null
   2. void
   3. empty
   4. none

3. Which of the following follows Java's method definition syntax correctly?
   1. function myFunc(int a) => a + 1
   2. int myFunc(a) { return a; }
   3. int myFunc(int a) { return a; }
   4. myFunc(int a): return a

4. What does the DRY principle stand for?
   1. Don't Rewrite Yourself
   2. Do Run Yourself
   3. Don't Repeat Yourself
   4. Don't Reset Yourself

5. Which function definition correctly demonstrates overloading?
   1. int greet() and void greet()
   2. void greet(String name) and void greet()
   3. void greet(String name, String name)
   4. void greet(String) and greet(String)

6. What will be the output of the following code?

```
int square(int num) {
   return num * num;
}

System.out.println(square(4));
```

   1. 8
   2. 16
   3. 4
   4. Error

7. Which of the following is NOT a valid function name in Java?
   1. calculateSum
   2. 2calculate
   3. displayMessage
   4. get_total

8. Which of the following is a built-in function in Java?
   1. System.out.println()
   2. addNumbers()
   3. greetUser()
   4. calculateTax()

9. Which of the following statements is TRUE about functions?
   1. They reduce readability
   2. They prevent reuse
   3. They modularize code
   4. They increase complexity

10. What is the purpose of the return statement?
    1. To print output
    2. To pass value back from function
    3. To exit a loop
    4. To define variables

11. Guess the output:

```
void sayHello() {
   System.out.println("Hello!");
}

sayHello();
```

    1. Hello!
    2. Error
    3. void
    4. Nothing

12. Which of the following calls a function named displayMessage with one argument?
    1. displayMessage();
    2. displayMessage("Hi");
    3. displayMessage;
    4. call displayMessage("Hi")

13. What does the following function return?

```
int add(int a, int b) {
   return a + b;
}

System.out.println(add(3, 7));
```

    1. 10
    2. 37
    3. 4
    4. Error

14. What type of value does the following function return?

```
double getDiscount() {
   return 0.2;
}
```

    1. int
    2. float
    3. double
    4. void

15. Which line will produce a compilation error?
    1. void greet() {}
    2. int x = 5;
    3. return x + 1;
    4. System.out.println(return);

16. What is the output of:

```
String message = "Local";
System.out.println(message);
```

    1. Local
    2. Error
    3. "Local"
    4. Null

17. In Java, where are functions defined?
    1. Outside class
    2. Inside loops
    3. Inside class
    4. Anywhere

18. What is method overloading?

1. Using too many parameters
2. Same method name, different signatures
3. Calling one method from another
4. Exceeding memory

19. Which is a valid return type?

1. word
2. nothing
3. string
4. boolean

20. A function with the same name but different parameters is:

1. Overridden
2. Overloaded
3. Recursive
4. Invalid

21. Debug the code:

```
void greet(String name) {
   System.out.println("Hello " + name)
}
```

1. Missing semicolon
2. Wrong parameter
3. Wrong method name
4. Extra braces

22. What will happen if you try to access a local variable outside its function?

1. It works fine=
2. Compile-time error
3. Runtime error
4. Prints null

23. Which is true for recursive functions?

1. They must end with a semicolon
2. They call other functions
3. They call themselves
4. They cannot return values

24. How to make functions more readable?

1. Use single-letter names
2. Use camelCase and verbs
3. Avoid comments
4. Use long names only

25. What does 'modularity' mean in functions?

1. One function does everything
2. Code is reused without logic
3. Code is broken into parts
4. Using only built-in methods

26. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 48 minutes less. What is the original speed?

1. 35 km/h
2. 40 km/h
3. 45 km/h
4. 50 km/h

27. A and B together can complete a piece of work in 20 days. B alone can complete it in 30 days. How many days will A alone take?

1. 60
2. 40
3. 45
4. 50

28. The average of 5 consecutive odd numbers is 35. What is the smallest of these numbers?

1. 29
2. 31
3. 33
4. 35

29. A can do a job in 16 days, and B in 12 days. They work together for 4 days. How much work is left?

1. 1/3
2. 1/4
3. 5/12
4. 7/12

30. The average age of a group of 8 students is 22 years. If one more student joins the group, the average becomes 21. What is the age of the new student?

1. 13
2. 14
3. 15
4. 16