Started on	Wednesday, 26 March 2025, 3:29 PM
State	Finished
Completed on	Wednesday, 26 March 2025, 3:40 PM
Time taken	11 mins 49 secs
Marks	15.00/15.00
Grade	**100.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

Identify the error in this lambda expression usage:

import java.util.function.Predicate;

public class Test {

public static void main(String[] args) {

Predicate<String> p = (String s) -> { return s.length() > 3; };

System.out.println(p.test("Java"));

}

}

- ☐ a.   Runtime exception
- ☐ b.   Infinite loop
- ☐ c.   Compilation error
- ☑ d.   No error

Question 2

Complete

Mark 1.00 out of 1.00

What will be the output of the following SQL query?

SELECT COUNT(*), COUNT(column_name) FROM employees;

- ☐ a.   Both return the same count
- ☑ b.   COUNT(*) includes NULL values, while COUNT(column_name) ignores them
- ☐ c.   Syntax error
- ☐ d.   COUNT(*) ignores NULL values, while COUNT(column_name) includes them

Question 3

Complete

Mark 1.00 out of 1.00

Which of the following is TRUE about lambda expressions in Java?

- ☐ a.   They must be inside a method
- ☑ b.   They can be assigned to a functional interface reference
- ☐ c.   They must have a return type
- ☐ d.   They can access instance variables but not local variables

Question 4

Complete

Mark 1.00 out of 1.00

What will be the output of this SQL query?

SELECT name FROM students

WHERE id NOT IN (SELECT student_id FROM grades);

- ☐ a.   Names of students who have at least one grade
- ☐ b.   All student names
- ☐ c.   Error in query
- ☑ d.   Names of students who do not have a grade

Question 5

Complete

Mark 1.00 out of 1.00

Which SQL query finds the second highest salary from an employees table?

- ☑ a.   All of the above
- ☐ b.   SELECT salary FROM employees ORDER BY salary DESC LIMIT 1,1;
- ☐ c.   SELECT MAX(salary) FROM employees WHERE salary < (SELECT MAX(salary) FROM employees);
- ☐ d.   SELECT salary FROM (SELECT salary, RANK() OVER (ORDER BY salary DESC) r FROM employees) WHERE r = 2;

Question 6

Complete

Mark 1.00 out of 1.00

What does the following SQL query do?

SELECT department, AVG(salary)

FROM employees

GROUP BY department

HAVING AVG(salary) > 50000;

- ☑ a.   Displays only departments where the average salary is greater than 50,000
- ☐ b.   Filters departments before grouping
- ☐ c.   Selects all departments and filters those with salary greater than 50,000
- ☐ d.   Syntax error

Question 7

Complete

Mark 1.00 out of 1.00

Which traversal method will print the values of a Binary Search Tree in sorted order?

- ☐ a.   Level Order
- ☐ b.   Preorder
- ☐ c.   Postorder
- ☑ d.   Inorder

Question 8

Complete

Mark 1.00 out of 1.00

Which of the following operations has the same time complexity in both Binary Search Tree (BST) and Hash Table?

- ☐ a.   Delete
- ☑ b.   None of the above
- ☐ c.   Search
- ☐ d.   Insert

Question 9

Complete

Mark 1.00 out of 1.00

Which of the following is a valid use of the Predicate functional interface?

- ☐ a. Predicate<Integer> p = (int n) -> return n > 0;
- ☑ b. Predicate<Integer> p = (n) -> n > 0;
- ☐ c. Predicate<Integer> p = (n) -> { return n > 0 }
- ☐ d. Predicate p = n -> return n > 0;

Question 10

Complete

Mark 1.00 out of 1.00

Which statement about Java constructor overloading is correct?

- ☐ a. A constructor can return a value
- ☐ b. Two constructors in the same class cannot have the same number of parameters
- ☐ c. Java does not allow constructor overloading
- ☑ d. A constructor can call another constructor using this()

Question 11

Complete

Mark 1.00 out of 1.00

Which data structure allows both LIFO and FIFO operations efficiently?

- ☐ a. Stack
- ☐ b. HashMap
- ☑ c. Deque
- ☐ d. Queue

Question 12

Complete

Mark 1.00 out of 1.00

Which of the following is the most efficient data structure for priority queue implementation?

- ☐ a.   Linked List
- ☐ b.   Stack
- ☐ c.   BST
- ☑ d.   Binary Heap

Question 13

Complete

Mark 1.00 out of 1.00

What does the following SQL query do?

DELETE FROM employees

WHERE id IN (SELECT id FROM employees WHERE salary < 30000);

- ☐ a.   Selects employees with salary less than 30,000 but does not delete
- ☑ b.   Deletes employees earning less than 30,000
- ☐ c.   Throws an error
- ☐ d.   Deletes all employees

Question 14

Complete

Mark 1.00 out of 1.00

What is the best-case time complexity of QuickSort?

- ☐ a. $O(n^2)$
- ☐ b. $O(n)$
- ☑ c. $O(n \log n)$
- ☐ d. $O(\log n)$

Question 15

Complete

Mark 1.00 out of 1.00

What will be the output of the following code?

```
import java.util.function.Predicate;
public class Test {
public static void main(String[] args) {
    Predicate<Integer> isEven = x -> x % 2 == 0;
    System.out.println(isEven.test(7));
}
}
```

- ☐ a. Runtime Exception
- ☐ b. True
- ☐ c. Compilation Error
- ☑ d. False