Jr. Developer Technical Test - Practice Questions

Core Java

1. Explain OOP principles with examples (Inheritance, Polymorphism, Abstraction, Encapsulation).
2. Difference between interface and abstract class.
3. Exception handling - try/catch/finally, throw vs throws.
4. Collections - ArrayList vs LinkedList, HashMap vs HashSet.
5. Explain immutability in Strings, difference between String, StringBuilder, and StringBuffer.
6. JVM vs JDK vs JRE.
7. Stack vs Heap memory.
8. Coding: Reverse a string without using built-in functions.
9. Coding: Find factorial of a number (recursion and loop).
10. Coding: Check if a number is prime.
11. Coding: Check palindrome.
12. Coding: Print Fibonacci series.

C Language

1. Difference between malloc and calloc.
2. Difference between struct and union.
3. Explain storage classes: auto, static, extern, register.
4. Pointers basics (pointer to pointer, pointer arithmetic).

SQL

1. Difference between DELETE, TRUNCATE, DROP.
2. Primary key vs Foreign key.
3. Query: Find second highest salary from employee table.
4. Query: Find duplicate records in a table.
5. Query: Count employees per department where count > 5.
6. Write an SQL JOIN example.

HTML / CSS / JavaScript

1. Difference between inline, block, inline-block elements.
2. What are semantic HTML tags?
3. CSS specificity rules (inline > id > class > element).
4. Explain CSS positions: relative, absolute, fixed, sticky.
5. Difference between var, let, const in JavaScript.
6. == vs === in JavaScript.
7. What is hoisting?
8. Arrow functions vs normal functions.
9. What is a closure?
10. Coding: JS program to reverse an array.
11. Coding: JS program to check palindrome.
12. Coding: JS program to find factorial.

React

1. What are components (class vs functional)?
2. What is JSX?
3. Difference between props and state.
4. Explain useState and useEffect hook.
5. Controlled vs uncontrolled components.
6. Coding: Build a counter component with increment button.

Logical Reasoning / Aptitude

1. Find the missing number: 2, 6, 12, 20, ?
2. If 3 cats catch 3 mice in 3 minutes, how many cats are needed to catch 100 mice in 100 minutes?
3. A train 180m long crosses a pole in 6 sec, find its speed.
4. Solve a blood relation puzzle (e.g., A is B's brother, B is C's sister, etc).
5. Simple probability: What is the probability of getting a head when tossing 2 coins?
6. Percentage problem: A student scored 180 out of 300, what is the percentage?