C

C LANGUAGE

(LTIMindtree interview reality based)

Q1. Why is C still used today?

Answer:
C gives low-level memory access, high performance, and is close to hardware. That's why OS, embedded systems, and system software still use C.

Q2. Difference between stack and heap memory in C?

Answer:
Stack stores function calls and local variables automatically. Heap stores dynamically allocated memory using malloc/calloc.

Q3. What is pointer and why is it important?

Answer:
Pointer stores address of a variable. It helps in dynamic memory, arrays, and efficient function calls.

Q4. What is memory leak?

Answer:
When allocated memory is not freed, memory leak occurs, leading to performance issues.

Q5. What happens if array index goes out of bounds?

Answer:

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Undefined behavior occurs. Program may crash or give wrong output.

Q6. Difference between call by value and call by reference?

Answer:
Call by value passes copy of variable. Call by reference passes address, so changes reflect back.

◈ PART 2

CORE C INTERVIEW QUESTIONS (ANY COMPANY / ANY ROLE)

ఇవి EVERGREEN.
ఇవి రాకపోతే C knowledge weak.

Q1. What is structure?

Answer:
Structure groups different data types under one name.

Q2. Difference between structure and union?

Answer:
Structure allocates memory for all members. Union shares memory among members.

Q3. What is function?

Answer:
Function is a block of code that performs a specific task.

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Q4. What is recursion?

Answer:
Function calling itself to solve a problem.

Q5. What is static keyword?

Answer:
Static preserves variable value between function calls.

Q6. What is extern keyword?

Answer:
Extern is used to declare global variables across files.

Q7. What is header file?

Answer:
Header file contains function declarations and macros.

Q8. What is preprocessing?

Answer:
Preprocessing handles directives like #include, #define before compilation.

◈ PART 3

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BASIC – CRITICAL – PROGRAMMING (3 TYPES)

WITH QUESTIONS & ANSWERS

◈ A. BASIC C QUESTIONS (Foundation Check)

1. What is C language?
Ans: Procedural programming language developed by Dennis Ritchie.

2. What is variable?
Ans: Named memory location to store data.

3. What is data type?
Ans: Defines type and size of data.

4. What is loop?
Ans: Repeats block of code.

5. What is array?
Ans: Collection of same data type elements.

◈ B. CRITICAL C QUESTIONS (Elimination Level)

1. Difference between array and pointer?
Ans: Array stores values; pointer stores address.

2. What is dangling pointer?
Ans: Pointer pointing to freed memory.

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3. What is segmentation fault?
Ans: Invalid memory access error.

4. What is malloc vs calloc?
Ans: malloc allocates memory; calloc initializes memory to zero.

5. What happens if free() is not used?
Ans: Memory leak.

◈ C. PROGRAMMING LOGIC QUESTIONS (Explain Logic)

> Syntax perfect అవసరం లేదు
Logic explain చేయాలి

1. Reverse a number

Logic:
Use modulo to get last digit, divide number, build reverse.

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2. Find largest of three numbers

Logic:
Compare using if-else conditions.

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3. Check palindrome number

Logic:
Reverse number and compare with original.

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4. Count digits in a number

Logic:
Divide number repeatedly until zero.

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5. Swap two numbers without third variable

Logic:
Use arithmetic operations.

🌑 MOST IMPORTANT C INTERVIEW POINTS (LECTURER CHECKLIST)

Pointer clarity

Stack vs heap

Memory allocation

Arrays & functions

Logical explanation ability

👉 If student fails here → not interview-ready.

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