

# C Interview Questions and answers for fresher

Topics : [C Interview Questions](#)  
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## Basics of C:

### 1. What is C?

- **Answer:** C is a general-purpose, procedural programming language developed by Dennis Ritchie at Bell Labs in the 1970s.

### 2. What is the difference between `int` and `float` data types?

- **Answer:** `int` is used for integer values, while `float` is used for floating-point (decimal) values.

### 3. Explain the difference between `printf()` and `scanf()` functions.

- **Answer:** `printf()` is used for output (printing to the console), while `scanf()` is used for input (reading from the console).

## Variables and Data Types:

### 4. What is a variable?

- **Answer:** A variable is a named location in memory that stores a value.

### 5. What is the size of the `int` data type in C?

- **Answer:** The size of `int` varies by system architecture but is typically 4 bytes.

### 6. Explain the `sizeof` operator.

- **Answer:** `sizeof` returns the size, in bytes, of a variable or data type.

## Control Flow:

### 7. What is the purpose of the `if` statement in C?

- **Answer:** The `if` statement is used for conditional execution of code based on a specified

condition.

**8. Explain the difference between while and do-while loops.**

- **Answer:** while tests the condition before the loop, while do-while tests it after the loop.

**9. What is a switch statement used for?**

- **Answer:** A switch statement is used for multi-way branching based on the value of an expression.

**Functions:**

**10. What is a function in C?**

- **Answer:** A function is a block of code that performs a specific task.

**11. Explain the difference between actual parameters and formal parameters.**

- **Answer:** Actual parameters are passed to a function during a function call, while formal parameters are used within the function.

**12. What is recursion?**

- **Answer:** Recursion is a technique where a function calls itself directly or indirectly to solve a problem.

**Arrays and Pointers:**

**13. What is an array in C?**

- **Answer:** An array is a collection of elements of the same data type stored in contiguous memory locations.

**14. Explain the concept of a pointer.**

- **Answer:** A pointer is a variable that holds the memory address of another variable.

**15. How do you dynamically allocate memory in C?**

- **Answer:** Use the `malloc()` function to dynamically allocate memory.

**Strings:**

**16. What is a string in C?**

- **Answer:** A string is an array of characters terminated by a null character `\0`.

**17. How do you compare two strings in C?**

- **Answer:** Use the `strcmp()` function to compare two strings.

## Structures and Unions:

### 18. What is a structure in C?

- **Answer:** A structure is a user-defined data type that groups related data members under one name.

### 19. Explain the concept of a union.

- **Answer:** A union is a user-defined data type that allows storing different data types in the same memory location.

## File Handling:

### 20. What is a file in C?

- **Answer:** A file is a collection of data stored on a secondary storage device.

### 21. How do you open a file in C?

- **Answer:** Use the `fopen()` function to open a file.

### 22. Explain the purpose of the `fclose()` function.

- **Answer:** `fclose()` is used to close a file that was opened using `fopen()`.

## Memory Management:

### 23. What is the purpose of the `free()` function?

- **Answer:** `free()` is used to deallocate memory previously allocated by `malloc()` or related functions.

## Preprocessor Directives:

### 24. What is a preprocessor directive?

- **Answer:** A preprocessor directive is a command that starts with a `#` symbol, and it is executed before the actual compilation.

### 25. What is the purpose of `#include` in C?

- **Answer:** `#include` is used to include the content of a file during the preprocessing stage.

## Bitwise Operations:

### 26. What are bitwise operations?

- **Answer:** Bitwise operations manipulate individual bits of binary numbers.

### 27. Explain the `&` (bitwise AND) operator.

- **Answer:** & performs a bitwise AND operation.

## **Dynamic Memory Allocation:**

28. **What is dynamic memory allocation in C?**

- **Answer:** Dynamic memory allocation allows a program to allocate memory at runtime.

29. **How do you allocate memory for an array dynamically?**

- **Answer:** Use the `malloc()` function.

## **Enumerations:**

30. **What is an enumeration in C?**

- **Answer:** An enumeration is a user-defined data type that consists of named integer constants.

## **Miscellaneous:**

31. **What is the purpose of the `sizeof` operator in C?**

- **Answer:** `sizeof` returns the size, in bytes, of a variable or data type.

32. **Explain the purpose of the `const` keyword.**

- **Answer:** `const` is used to declare constants, and it indicates that the variable's value cannot be changed.

33. **What is the difference between `++i` and `i++`?**

- **Answer:** Both increment the value of `i` by 1, but `++i` is the pre-increment operator, and `i++` is the post-increment operator.

34. **Explain the `typedef` keyword.**

- **Answer:** `typedef` is used to create an alias for existing data types.

35. **What is the purpose of the `return` statement in a function?**

- **Answer:** The `return` statement is used to specify the value a function should return.

36. **What is the purpose of the `break` statement?**

- **Answer:** The `break` statement is used to exit from a loop or switch statement.

37. **Explain the difference between `NULL` and `0`.**

- **Answer:** `NULL` is a macro representing a null pointer, while `0` is the integer literal zero.

38. **What is a comment, and how do you write comments in C?**

- **Answer:** Comments are explanatory notes in the code. In C, you can use `//` for single-

line comments and /\* \*/ for multi-line comments.

**39. What is the purpose of the continue statement?**

- **Answer:** The continue statement is used to skip the rest of the loop and move to the next iteration.

**40. Explain the concept of a constant pointer.**

- **Answer:** A constant pointer is a pointer whose address cannot be changed but the value it points to can be modified.

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