



P P S

TOPIC WISE QUESTION

Topics



1. Introduction to programming → Basic
2. Operators
3. Conditional statement
4. Loops
5. Array
6. String
7. Basic algorithm
8. Function
9. Recursion
10. Structure, union , Enum
11. Pointer
12. Dynamic memory allocation
13. File handling

2019

- ✓ What do you mean by pre-processor? Also explain the use of %i format specifier w.r.t, scanf() function.

2020

- ✓ Discuss about some methods or methodologies used for problem solving.
- ✓ How programming utilizes different components of computer system.
- ✓ What is algorithm? Give an example algorithm for any problem.
- ✓ What is the difference between compilation and execution of a program?
- ✓ What is the effect of warning and syntax error on program execution? What we get as an output of compilation step?
- ✓ What are variables? List the 'data types' which can be associated to a variable in c language.
- ✓ What is the role of 'header files' in c language? List any four with their usage.
- ✓ Draw a flowchart to find the average of 10 number of an array.

2021

- ✓ Draw flowchart to determine whether a given number is even or odd.
- ✓ What is meant by digital computer? Draw a schematic to show various functional units of digital computer
- ✓ What are compilers? How are they different from interpreters? Compare the feature of compiler and interpreters
- ✓ Draw and label different symbols used in flowcharts. Explain with suitable example.
- ✓ Develop an algorithm to find the greatest of three number.

2022

- ✓ What is storage classes in c. write features (storage, default value, scope, life) of variables defined under each storage class



Operator



2019

- ✓ Explain the following bitwise operators:
 - Bitwise AND
 - Bitwise OR
 - Bitwise XOR
 - Bitwise left shift

2020

- ✓ Write the syntax for conditional operator in c. also write the syntax for some conditional statements used in c.

2022

- ✓ Discuss conditional operator? Write a c program to find largest of three number using conditional operator?

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- ✓ Bitwise shift operators

Conditional Statement



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- ✓ Write a program to find the greatest of the three numbers entered through the keyboard, first using nested if-else construct, and then using conditional operators.

Iteration & Loop



2020

- ✓ List the looping constructs used in c. what are the roles of 'break' and 'continue' statements in loops? Show with examples.

2022

- ✓ Explain entry controlled loop and exit controlled loop with flow charts and examples.
- ✓ Write a C program to reverse a given multi-digit number.
- ✓ Explain break and continue keyword with suitable examples in context of managing loops.
- ✓ Write a c program using the nesting of loops to print the following pattern:

```
1
2 3
4 5 6
7 8 9 10
```

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- ✓ Differentiate between entry and exit controlled loops with suitable examples (flowcharts).
- ✓ Write a program in c to print the following pattern:

```
1
2 3
4 5 6
7 8 9 10
```

- ✓ Differentiate between break and continue statements with examples. How break differ from exit() ?

Array



2022

- ✓ Write a c program to find result matrix after multiplying two given matrices using 2-D arrays.
- ✓ Write a c program to copy the contents of one array into another in reverse order.

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- ✓ Explain compile-time and run-time initialization of array with suitable example.

String



2022

- ✓ How string is declared and initialized? Explain any four predefined string manipulation functions with examples.
- ✓ Write a c program that converts a string like "124" to an integer 124.

2021

- ✓ Write a program to print the lowercase characters into uppercase and vice versa in the given string "gOOd mORning"
- ✓ Write a program to accept a string as input from user and determine its length. [do not use build in library function strlen().]

2020

- ✓ list three different ways to read a string from the prompt.

2019

- ✓ Write a c program of the following :
 - Reverse a string without using strrev()
 - Concatenate two string without using strcat()

2018

- ✓ Write a c program to count the number lines input by the user.



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- ✓ Write your own version of string manipulation functions `xstrlen()` and `xstrcpy()` to mimic standard library functions `strlen()` and `strcpy()`.
- ✓ Write a c program that converts a string like "124" to an integer 124.

Sorting & searching



2022

- ✓ Write a c function for bubble sort. Analyse the time complexity of bubble sort for each standard cases.

2020

- ✓ Given a list of 11 numbers. write a c program to find the median of that list
- ✓ How is merge sort different from other sorting algorithms?

2019

- ✓ Write a c program to perform binary search on a set of given sorted numbers
- ✓ Merge-sort of a set of given numbers

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- ✓ Sort the following numbers in ascending order: 12,6,17,4,2,9,5 using insertion sort technique. Given clear explanation for every pass.

Function



2022

- ✓ Differentiate between formal argument and actual argument with an example.
- ✓ Difference between call-by-value and call-by-reference with suitable examples.

2021

- ✓ Differentiate between function declaration and function definition explain with suitable example.
- ✓ Write the program to swap values of two variable using call by reference.

2020

- ✓ What are function? How are they useful? Comment on two categories in which various function can be categorized.
- ✓ Write a c program to generate Fibonacci series using function
- ✓ What are the ways of parameter passing in functions? Explain each.
- ✓ What do you mean by command line argument? Give an example.

2019

- ✓ What do you mean by 'call by reference' ? Explain with the help of a function which swaps two numbers.

2018

- ✓ Explain the difference between call by reference and call by value with the help of a suitable example.
- ✓ What are library function and their uses in c language? Can we write our own functions and include them in c library?



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- ✓ Multiple return statements are allowed within a function but a function cannot return more than one value. Explain with example.
- ✓ Explain call-by-value and call-by-reference with examples. Differentiate between null and

Recursion



2022

- ✓ What is recursion ? Write a recursive C program to generate n th term of Fibonacci series.

2021

- ✓ The value of a number (N) is entered through keyboard. Write a program using recursion to calculate and display factorial of number (N).

2019

- ✓ Write a recursive c program to print the following:
 - GCD of two number

2018

- ✓ Write a recursive c program to print
 - Fibonacci series
 - Factorial of a given number

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- ✓ A 5-digit positive integer is entered through the keyboard, write a recursive function to calculate sum of digit of digit of the given number.

Structure, union & Enumeration



2022

- ✓ Write the difference between structure and union. Compare them with the help of an example.

2021

- ✓ Define enumerated data type with suitable example.
- ✓ Give a method to create, declare and initialize structure also develop a program to demonstrate nested structure
- ✓ Write a program to declare structure employee having data member name, age, street and city accept data for two employees and display it.

2020

- ✓ what are the structures in C ? how are they different from union?
- ✓ Write a c program to create an array of structure named "STUDENT" with fields name, roll no. , address and marks, also add the code for inserting, deleting and printing any student record.

2018

- ✓ Write the difference between structure and union. Compare them with the help of an example.

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- ✓ Differentiate between structure and union. Write an example situation where union is more suitable than structure.
- ✓ Linked list

2021

- ✓ Develop a program to find sum of all elements stored in given array using pointers
- ✓ Write a program to display the sum and average of numbers from 100 to 200 using pointers
- ✓ Explain how to pass pointer to function with example

2020

- ✓ Write a c program to find the largest number from an array using pointer

2019

- ✓ Explain pointer arithmetic with the help of suitable diagrams.

2018

- ✓ How array and pointer are related? Explain with the help of suitable diagrams.

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- ✓ What is the relation between array and pointer? What is array of pointers? Explain with examples.
- ✓ Pointer to an array

Dynamic memory allocation



2020

✓ What is dynamic memory allocation? How is this achieved in c? explain.

2018

✓ With the help of an example, differentiate between static and dynamic memory allocation

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✓ Dynamic allocation of memory



File handling

2022

- ✓ Write a c program to copy contents of one file to another. While doing so replace all lowercase characters to their equivalent uppercase characters.

2020

- ✓ Write a c program to copy the content of one file into other.

2019

- ✓ Write a c program to find the number of lines in a text file.

2018

- ✓ Write a c program to illustrate reading of data from a file

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- ✓ Write a program in c to copy one file to another. While doing so replace all lowercase characters to their equivalent uppercase characters.

2018

- ✓ Write a c program to convert an infix expression into postfix expression in particular, an infix expression : $(1-2)*(4/5)$ will have postfix expression: $12-45/*$