

Theory Final Exam Question

Total Marks 100

Question:1

- a) Define ternary operator. Write a C program to find the maximum of two numbers using ternary operators. (2+5)
- b) Write down the differences between local and global variables. (3)

Question:2

You want to build a fibonacci series up to n terms. Now solve these problems without using an array and at first write the steps to solve these problems and then write a C program for it.

Note - The Fibonacci sequence is a sequence where the next term is the sum of the previous two terms. The first two terms of the Fibonacci sequence are 0 followed by 1.

Input Format:

You are given a positive integer n.

Output Format:

Print the fibonacci series up to n terms.

See the sample input output for more clarification

| Sample input | Sample output |
|--------------|---------------------------------|
| 10 | 0, 1, 1, 2, 3, 5, 8, 13, 21, 34 |

Question - 3

Define pointers of C. What are the differences between pass by value and pass by references, Explain it with C program using function. (1+3+6)

Question - 4

You are given a string S of small letters. Now sort the string in ascending order using frequency array. Write the steps to solve this problem with proper diagram. Lastly write a C program for it and use function in this program. **(10)**

Note - The given input may contain duplicate characters

| Sample input | Sample output |
|--------------|---------------|
| adsarbrro | aabdorrss |

Question - 5

What is the difference between malloc and calloc? Write a c program to take N elements in an array. You must use malloc to declare this array and show the output of the array. **(4+6)**

Question - 6

What is a function? Types of user-defined functions explain with proper examples. What are the benefits of using user-defined functions? **(2+5+3)**

Question - 7

You have been given an $N \times M$ matrix, Now your task is to take two matrix as input and find the sum of this two matrix. **(10)**

| Sample Input | Sample Output |
|---|---------------------------|
| 3 3 1 2 3 4 5 6 7 8 9 1 1 1 3 2 4 2 1 2 | 2 3 4 7 7 10 9 9 11 |

Question -8

- a) What is structure? Explain Why we use it? (2)
- b) How many ways to access structure members? Explain with example. (3)
- c) Write a C program to store the information of a student using structure. (5)

| Sample Input | Sample Output |
|---|--|
| Enter information: Enter name: Vanya Enter roll number: 25 Enter marks: 80 | Displaying Information: Name: Vanya Roll number: 25 Marks: 80 |

Question -9

- a) Explain 5 types of Errors in C with Example (You have to write program) (10)

Question - 10

(Think out of the Box)

(5x2 = 10)

- a) Why is C called the Mother of all Languages?
- b) What is source code & **.obj** file and **.exe** file?
- c) When you run a C program How many files are created on your device?
What are they?
- d) What is the base condition in the recursion function? Describe a real-life example of recursion.
- e) Why should we declare large data type first in structure?