

27/6/2023

Time: 2 hour

Max. Marks: 60

NB: 1) Question No.1 is compulsory.

2) Attempt any three questions from question no. 2 to 6.

Q1 Solve any three out of the following. 15

A List and explain different components of Computer System. 05

B Write a program to find largest of three numbers using nested if-else. 05

C Explain function prototype with proper example. 05

D Explain the following functions with proper example. 05

a) strlen() b) strcmp() c) strcat()

E Define Structure and explain the syntax of declaration of Structure with example. 05

Q2 15

A Define Flowchart and Draw flowchart to find sum of digits of an accepted number. 05

B Write a program to sort the elements of one dimensional array in ascending order. 05

C Explain conditional operator with proper example. 05

Q3 15

A Explain control breaking statements available in C language. 05

B Write a program to calculate value of $f(x)$, if x has different ranges of values as below 05

$$f(x) = x^2 + 2 \quad 0 \leq x \leq 10$$

$$= x^2 + 2x \quad 10 < x \leq 20$$

$$= x^3 + 2x^2 \quad 20 < x \leq 30$$

$$= 0 \quad x > 30$$

C Write a program to check whether the entered string is palindrome or not. 05

Q4

- A Explain different data type modifiers available in C language. 15
05
- B Write a program to find square root of a accepted perfect square integer number **without** using standard sqrt() function. 05
- C Explain the multi-way branching statement available in C language with example. 05

Q5

- A Write a program using function to check if the entered number is prime number or not. 15
05
- B Define recursion and Write a program to calculate power of a given number using recursive function. 05
- C Write a program to accept number of rows from user and display following patterns for expected number of rows. 05
- 1234
123
12
1

Q6

- A Write a program to find transpose of a square matrix using only one matrix. 15
- B Write a program to design a structure Employee with members Employee No, Employee Name, Experience and salary. Read the information of 100 employees and display employee information that is having 5 years or more experience and salary less than Rs. 10,000. 10