

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**

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

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

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

$$= 0 \quad x > 30$$

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

- Q4** **15**
- A** Explain different data type modifiers available in C language. **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** **15**
- A** Write a program using function to check if the entered number is prime number or not. **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** **15**
- A** Write a program to find transpose of a square matrix using only one matrix. **05**
- 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**