

Time: 2 hour

Max. Marks: 60

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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**

$$\begin{aligned} f(x) &= x^2 + 2 & 0 \leq x \leq 10 \\ &= x^2 + 2x & 10 < x \leq 20 \\ &= x^3 + 2x^2 & 20 < x \leq 30 \\ &= 0 & x > 30 \end{aligned}$$

- 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**