

Con. 6927-13.

GS-5508

**(REVISED COURSE)**

(3 Hours)

[ Total Marks : 80

- N.B.** (1) Question No. 1 is compulsory.  
 (2) Attempt any **three** questions from remaining.  
 (3) **All** questions carry **equal** marks.  
 (3) Assume suitable **data** wherever **necessary**.
1. (a) Explain the purpose of following standard library functions – 3  
       (i) Floor ( )       (ii) ceil ( )       (iii) sqrt ( )
  - (b) Explain how problem is defined with a help of suitable example. 4
  - (c) Explain difference between for, while and do while loop. 3
  - (d) Explain difference between call by value and call by reference. 4
  - (e) Explain any three string standard library functions. 3
  - (f) Explain reference and de-reference operators with example. 3
  2. (a) Explain various storage classes used in c with example. 5
  - (b) Write a program to calculate sum of list by passing array to a function. 5
  - (c) Write a c-program to create an array of structure to store the details of almost 100 10  
       employees. And sort it according to employee ID. Employee details are as follows :  
       (i) Employee Name  
       (ii) Employee ID  
       (iii) Employee Salary.
  3. (a) Write an algorithm and draw flowchart to calculate roots of quadratic equation. 6
  - (b) Write a program to display pascal triangle. 6  
       A  
       A B  
       A B C  
       A B C D  
       A B C D E
  - (c) Explain recursion concept. Write a program to display Fibonacci series using recursion. 8
  4. (a) Write an algorithm to sort set of numbers in ascending order. For above problem 6  
       in which cases time complexity is calculated.
  - (b) Write a program to display armstrong nos between 1 to 1000. 6
  - (c) Write a program to calculate matrix multiplication and transpose for a matrix. 8

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5. (a) Write a output for following program :-

6

```
# include <stdio.h>
Void main ( )
{
    int x = 10, y, z;
    z = y = x;
    y-- = -- x;
    z -- = x -- --;
    x -- = -- x -- x -- --;
    printf ("x = %d y = %d z = %d," x, y, z);p
}
```

(b) WAP to calculate sum of series

 $1/2 + 3/4 + 5/6 + \dots + n$  terms.

6

(c) Write a program to sort list elements in descending order.

8

6. (a) Explain difference between switch statement, ladder of if else and nested if else.

6

(b) Write a recursive program to calculate factorial of accepted number.

6

(c) Write a program to validate whether accepted string is palindrome or not.

5

(d) Explain how to read the contents of file and write into the file with Syntax.

3

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