

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 :-

```
# 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.

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

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

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

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

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

6

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8

6

6

5

3

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