MANIPAL UNIVERSITY

Deemed- to -be -University under Section 3 of the UGC Act, 1956

Reg. No.									

DEPARTMENT OF SCIENCES, I SEMESTER M.Sc
(Applied Mathematics and Computing))
END SEMESTER EXAMINATIONS, Nov/Dec 2017

Subject [C-Programming-MAT 4109]

(REVISED CREDIT SYSTEM-2017)

Time: 3 Hours Date: 25.11.2017 MAX. MARKS: 50

Note: (i) Answer all **FIVE FULL** questions
(ii) All questions carry equal marks (4+3+3)

1. (a) Write a program to find HCF and LCM of two entered numbers using recursion.
   (b) Write a program to read the name and total marks of a list of students and sort the list in descending order of the marks and display it using structures.
   (c) Write the output of the following program:

```
#include <stdio.h>
main()
{
int r = 2, l = 4, x = 21, y, z;
y = x >> r;
z = x << l;
printf("y = %d\t z = %d.", y, z);
}
```

2. (a) Write a program to find the roots of a quadratic equation $ax^2 + bx + c = 0$.
   (b) Explain identifiers and keywords with an example.
   (c) Write the output of the following program.

```
#include<stdio.h>
main()
{
int a = −10, b = 6, c, d, e;
 c = a − − − b;
 d = − − b;
 e = b − −;
printf("%d  %d  %d  %d  %d", a, b, c, d, e);
}
```

(P.T.O)

3. (a) Write a program to search for a given string and its position in an array of n strings.
   (b) Write a program to find all prime numbers between two entered limits using function.
   (c) With syntax and examples, explain *static, register* and *extern*.

4. (a) Write a program to insert an element in a particular position of the array.
   (b) Write a program to read a matrix and to determine whether it is symmetric or not.
   (c) What is the output of the following program segment;

```
#include<stdio.h>
#include<string.h>
main()
{
char a[]="Real Analysis",b[]="Algebra",c[]="C-Programming";
printf("%s\n",strncpy(c,b,5));
printf("%s\n",strrev(a));
printf("%s\n",strnset(b,'M',2));
printf("%s\n",strncat(a,b,3));
}
```

5. (a) Write a program to sort using selection sort technique, a set of numbers in descending order using pointers.
   (b) What is the output of the following program segment?

```
#include <stdio.h>
main()
{
int x=10, y=12;
x = x ^ y;
y = x ^ y;
x = x ^ y;
printf("x = %d\ny = %d\n", x, y);
}
```

   (c) Design a flow chart and algorithm to reverse a given number.

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