Roll No.: **Name:** Maximum Marks:20

Each of **Q 1.** and **Q 2.** is a part of a C program. Write down the output in the space below each question.

Q 1. [5]

```
char *p,a[10]="LloeM G";
int i;
p=a+9;
for(i=0;i<=4;i++)
   p[-i]=a[7-i];
printf("%s\n",a);
p="T on Table" + 2;
printf("%s\n",p);
------------------
```

Q 2. [5]

```
int a[2][4]={{3,2,5},{-3,-4}};
int *p,**q,i,j;
printf("%d  %d  %d  %d\n",**a+1,*(*a+1),**(a+1),*(*(a+1)-1));
q=&p;
p=a[1]+2;
**q=6;
p[-5]=3;
*(*q+1)=5;

for(i=0;i<2;i++)
  {
   for(j=0;j<4;j++)
      printf("%d ",a[i][j]);
   printf("\n");
  }
--------------------
```

Q 3. Complete the details of the program given on next page at appropriate places (see the comments). The program calculates Frobenius norm of a matrix **A** and magnitude of a vector **b** using a function **calFd**. The Frobenius norm, $||\mathbf{A}||_F$, of a real $m \times n$ matrix **A** is defined as the square root of the sum of the squares of its elements, i.e., $||\mathbf{A}||_F = \sqrt{\sum_{i=1}^{m} \sum_{j=1}^{n} a_{ij}^2}$.

```
#include <stdio.h>
#include <math.h>
#include <stdlib.h>
//Write the prototype of the function calFd below

int main( )
{
double A[2][3]={{-0.1,2.9,5.7},{-0.03,2.735,9.99}},b[5]={2.0,0.99,3,0};
double fnorm,magb;
//Call the function calFD below

/* After the call to the function, fnorm and magb contain the Frobenius
norm of A and magnitude of b */
printf("Frobenius norm of A=%0.2e and  magnitude of b is %0.2e\n",fnorm,magb);
return 0;
}
// Write the details of the function calFD below
```