**Lab 9**

**Recursion and Arrays in C**

Marks: 5

**Question 01:**

Check the following problems; find and correct errors, if any. What will be the output in each case?

* 1. main(){ int i, x[10] = { 1, 2, 3, 4};

for (i = 0; i < 10; i++) {printf("%d\n", \*x);x++;}}

* 1. main(){ int i, x[10] = { 1, 2, 3, 4}; for (i = 0; i < 10; i++) printf("%d\n", (x + i));}
  2. main(){ char x[10]; x = "Hawaii; printf("%s\n", x);}
  3. main(){ char x[10]; scanf("%s", x); printf("%s\n", x);}
  4. main(){ int x[5][10]; init(x[][]);} void init(int a[][]){ int i, j; for (i = 0; i < 10; i++) for (j = 0; j < 5; j++)

a[i][j] = 0;}

* 1. main(){ char s[5][100]; read\_strings(s); print\_strings(s);}

**Question 02:**

Write a program for all subjects of your college (first year + second Year).

* 1. Make a function to read scores into an array.
  2. Write a function to print the scores.
  3. Find maximum and second maximum score with its location.

**Question 03:**

Write a program for the union and intersection of two sets A and B:

* 1. The union is the set that contains members of each of the two sets A and B.
  2. The intersection contains only those members that are members of both the sets A and B

**Question 04:**

Computes and prints the first n Fibonacci numbers using the following recurrence:

f(1) = f(2) = 1

f(n) = f((n+1)/2)^2 + f((n-1)/2)^2 if n is odd

f(n) = f(n/2 + 1)^2 - f(n/2 - 1)^2 if n is even