

## Set A

### Sub: Programming in C

1. a) Why is C called a structural programming language? Differentiate between high level language and low level language. [7]  
b) Differentiate between algorithm and flowchart. Write an algorithm and flowchart to check whether a number is palindrome or not. [8]
2. a) What are data types and operator? Explain the arithmetic, relational, logical and assignment operators in C programming language. [8]  
b) Differentiate between exit controlled loop and entry controlled loop with a suitable example. [7]
3. a) Print the following pattern: [7]  

```
10101
 0101
   101
    01
     1
```

  
b) Why are arrays used in C? Write a C program to sort the n elements of an array in decreasing order. [8]
4. a) Define recursion? Write a C program to find the factorial of a given number using recursion. [7]  
b) Explain different ways to initialize an array. Write a C program to find the multiplication of 3x3 matrix. [8]
5. a) What is DMA? Explain in brief how we can dynamically allocate memory in C? [7]  
b) Differentiate between structure and union. Explain how can we access the member of a structure with examples. [8]
6. a) Create a structure for a cricket game that includes members (country name, player name, number of matches played by player and salary). Save the information for 50 players in a file named "cricket.txt" and display the information of those players who had played more than 10 matches. [8]  
b) Explain pass by reference with examples. Print the output. [7]

```
void func(int *p);
void main()
{
    int x=4;
    printf("%d\n",x);
    func(&x);
    printf("%d",x);
}
func(int *p)
{
    *p= *p/2 +13;
}
```

7. Write short note on: (Any two) [10]  
a. Storage Class in C                      b. String handling functions                      c. Switch case