Name:

Roll No:
e.g. 170001

Dept.:
e.g. CHE

Sect.:
e.g. A4

Problem 1 (**Twist the list!**: 10 marks). Give your answers in the space provided only.

1. In the space given, write down the output of the program given below.

```c
#include<stdio.h>
#include<stdlib.h>

struct node{ int data; struct node* next; };

void Query(struct node *head){
    struct node *slow_ptr = head;
    struct node *fast_ptr = head;

    if (head!=NULL){
        while (fast_ptr != NULL && fast_ptr
    ->next != NULL){
            fast_ptr = fast_ptr->next->next;
            slow_ptr = slow_ptr->next;}
        printf("Query returns %d\n\n",
    slow_ptr->data); } }

void push(struct node** head_ref, int
    new_data){
    struct node* new_node =
        (struct node*) malloc(sizeof(struct
    node));

    new_node->data  = new_data;
    new_node->next = (*head_ref);
    (*head_ref)    = new_node; }

void printList(struct node *ptr){
    while (ptr != NULL)
    {
        printf("%d->", ptr->data);
        ptr = ptr->next;
    }
    printf("NULL\n"); }

void main(){
    struct node* head = NULL;
    int i;

    for (i=0; i<5; i++){
        push(&head, 2*i+1);
        printList(head);
        Query(head); } }
```

```
1->NULL
Query returns 1

3->1->NULL
Query returns 1

5->3->1->NULL
Query returns 3

7->5->3->1->NULL
Query returns 3

9->7->5->3->1->NULL
Query returns 5
```