Aim 10(a): Program in C to insert a node at any position in singly linked list

Code:

```
#include<stdio.h>
typedef struct linkedlist
{
 int data;
 struct linkedlist *next;
}node;
node *temp,*ttemp,*ttnext,*first,*p;

void createfirst()
{
 first=(node*)malloc(sizeof(node));
 printf("Enter the data of node 1: ");
 scanf("%d",&first->data);
 first->next=NULL;
}

void addnode(int i)
{
 temp=first;
 while(temp->next!=NULL)
  temp=temp->next;
 ttemp=(node*)malloc(sizeof(node));
 printf("Enter the data of node %d: ",i);
 scanf("%d",&ttemp->data);
 ttemp->next=NULL;
 temp->next=ttemp;
}

void display()
{
 p=first;
 printf("Values of node of linked list are: ");
 while(p!=NULL)
 {
  printf("%d\t",p->data);
  p=p->next;
 }
}

void insert_at_n(int pos)
{
 int val,i;
 temp=first;
 for(i=1;i<pos-1;i++)
 temp=temp->next;
 ttnext=temp->next;
```

```
 ttemp=(node*)malloc(sizeof(node));
 printf("Enter value of new node: ");
 scanf("%d",&val);
 ttemp->data=val;
 temp->next=ttemp;
 ttemp->next=ttnext;
}
void main()
{
 int pos1,n,i;
 clrscr();
 printf("Enter the total number of nodes: ");
 scanf("%d",&n);
 createfirst();
 for(i=2;i<=n;i++)
 addnode(i);
 display();
 printf("\nEnter the position at which node is to be inserted: ");
 scanf("%d",&pos1);
 insert_at_n(pos1);
 display();
 getch();
}
```

OUTPUT: