LP:01

Q1) WAP to simulate the working of stack using an array with the following push, pop, display
The program should present the overflow
Using Array.

```
#include<stdio.h>
#define STACK_SIZE 5
int top=-1
int S[10];
int item;
void push()
{
 if (top==STACK_SIZE-1)
   {
    printf("Stack overflow\n");
    return;
   }
  top=top+1;
  S[top]=item;
}

int pop()
 {
  if (top==-1) return -1;
  return S[top--];
 }
void display()
  {
   int i;
    if (top==-1)
   {
    printf("Stack is empty\n");
    return;
   }
```

```
printf ("Contents of the stack \n");
 for ( i=top; i>=0 ; i--)
   {
     printf ("%d \n", S[i]);
   }
}

void main()
  {
    int item_deleted;
    int choice;

    for (;;)
  {
    printf ("\n 1: push \n 2: pop
            \n 3: display \n 4: exit
              \n ");

    printf ("enter the choice \n");
     Scanf (" %d", & Choice);

  Switch (choice)
   {
   case 1 : printf ("enter the item to be
              inseted \n");
            Scanf (" %d" , & item);
            push ();
             break;

   Cas 2 : item_deleted = pop ();
           if (item_deleted == -1)
           printf ("Stack is empty \n");
           else
           printf ("item deleted is
                   %d \n", item_deleted);
           break;
```

```
case 3 : display ( );
         break ;

default : exit (0);
}
}
}
```

Output of program 1)

1: push
2: pop
3: display
4: exit
enter the choice
1
enter the item to be inserted
11
12
13
14
15
16

Stack over flow

1: push
2: pop
3: display
4: exit
enter the choice
3

Contents of the stack
15
14
13
12
11

1: push
2: pop
3: display
4: exit
enter the choice
2
item_deleted is 15
:
item_deleted is 14
:
:
item_deleted is 13
:
item_deleted is 12
:
item_deleted is 11
:
:
Stack is empty