Lab-2 Write a perogram to convert a given valid proventhesized infix acithmetic expression to postfix expression. The expression consists of single character operands and the binary operators + - ** / and ^. #include <stolio.h> # include <string.h> # unclude <stdlib.h> # define max 10 int top=-13 int getPriority (char of); void infirtapostfix (chan sources]

chan target []; int Periority (chan); void push (char StEJ char val) char pop (char st[D; unt main () char infic [100], postfix [100]; printf ("In Enter any infix expression?) gets (infin); stropy (postfix, ""); infinitopostfix (infix, postfix); porintf ("In The corresponding postfix expression is:"); puts (postfix); return 0;

void infirtopostfix (char source [7] char target []) int i=0, j=0; chas st[max], temp; storcpy (target, ""); while (source[i] != "10") if (source [i] = = cc) frush (st, source [i]); else if(source[i]== ()?) nohile ((top! =-1) && (st[top]="(")) target [j] = pop(st); if (top = = -1) printf("In INCORRECT EXPRESSION").

J. exit(1); temp = pop (st); else if (isdigit(source[i]) I isolpha(source[j]) target [j]= source[i]; j++;i++;

else if (source [i]== '+' 11 source [i]=='> Il source [i] == \x'11 source [i] == 1/3 source [1]==(%) while ((top) = -1) & (st [top] 1= ")
& (get Biority (st [top])) > get Briority (surrely) target [j] - pop (st) Jush Cot, source [i]. INCORRECT ELEMENT IN EXPRESSION"), while ((top!=-1) && (st [top]!='(')) target [j] = 10; int getPeriority (char of) if (op == "/" 11 op == "x" 11 op == "%")

return 1;

else if (op == "+") 1 op == "-") void fush (chan st[], chan val) if (top == max-1)

fountf ("In STACK OVERFLOW"); top++;
st[top]=val;
} char pop (char st[) chan val= '\0';

if (top == -1)

forintf('e)nSTACK UNDERFLOW");
else xal=st[top]; return val; Output: Enter any infix expression: (A*(B*((CC+D)+B) * C)) The corresponding postfix expression is: ABCD+B+C**

Lale 3 WAP to simulate the working of queue of integers using an array Provide following operations.

a Insert & Delete & Display

The program should fount empty and queue overflow conditions. # include <stdio.h> #unclude <conio.h> # define max 10 int queue [max]; int front = -1 , rear = -1; uoid insert (void); int delete element (noid). int peck (void); unid display (void): int optionsual; frint ("()n *** MAIN MENU ** 37) printf ("In 1. Insert an element");

printf ("In 2. Delete an element");

printf ("In 3. Peek");

printf ("In 4 Display the queue");

printf ("In 5. Exit");

printf ("In 5. Exit");

Scarf ("Od" & obtion"); Scanf ("/od", Esption);

DATE: switch (option) case 1: insert (); break; val=delete element(); if (val =-1) printf("In The number deleted is ? Tod? val); break's val = feek(); if (val =-1) printf("In The frist value in queue is; % od ; val). break; display ();
break; 3 while (ofition 1=5); getch(); void insert() int num; frints ("InEnter the number to be scanf (" % d" forum; if (rear = mar -1)

frontf("In Onerflow");
else if (front == -1 && grean==-1)

front = grean=0;
else
grean++;
queue [rean]-num; int delete element() if (front == + 11 front > rear) printf ("Underflow").

preturn -1; ral = queue [front]; front +; if (front > rear) front = rear = -1; return val; int peck() if (front = = -1 11 front > reag) porint (") n Queue is Empty");

preturn -1;

else return queue [front] roid display () front == -1 11 front > erear)

front ("In Prene is Empty"). for (i=ferent ; i<=rear; i++)

fruintf ("It %d", queue [i]);
} Output: ** * MATN MENU** 1. Insert an element 2. Delete an element 3. Peck 4. Display the queue 5. Exit Enter your oftion:1 enter the number to be inserted in the querie: ? ** * MATN MENU *** 1 Insert an element 2. Delete an element 3. Peek 4 Display the queue

5. Exit Enter your ofition! Enter to be unserted in the queue:1 *** MAIN MENU*** 1. Insert an element 2. Delete an element 3. Poek 4. Display the green Enter your option: 3. The first value in queue isis 5. Exit 2) WAP to simulate the working of a circular queue of integers using an array. Provide the following Operations The program should frient appropriate messages for queue empty and queue overflow conditions.

#include <stdio.h> #include < conio. h> #indude < stdlib.h> # define max 10 int queue [max] int front = -1 , rear = -1; roid insert (roid); int delete element (void); int peak (word); void display (void) int main() int ofition, val; frintf("In ** MAIN MENU**"); prints ("In 1. Insent an element"); prints ("In 2. Delete an element") frintf ("In 3. Peek"); point (" n4- Display the queue) fountf (")n 5. Exit"); fount (a) nonter your option:") scanf ("%d" 4 option); switch (oftion) case 1: insert (); break; case 2: val = delete element() frintf("In The no deteted is: "/od", wal); if (val =+1) break;

case 3: val=hock():
if (val!=-D) frients ("In The first break; case 4: display); bereak; 3 notice (ofition! = 5); getch(); return 0; word insert() int run; forint (" nEnter no to be inserted in the queue:"). if (front = =0 &4 reas == max-1)

prints (")n Overflow").

else if (front == -1 & sean == -1) front = rear = 0:

querie [rear] = num: else if (rear==max-1 && front !=0) June [rear]=num; elsef set seartt;

queue [grean] = num; int delete element () int val: if (forant = =-1 & sean == -1) freint ("" In Underflow"). val = queue [front].

if Cfront = rear = -1;

else ?

if Cfront == max-1)

front = o;

else 3 front ++; int freek() if (feront == -1 84 reagr == -1) pount ("In Queue is Empty");
3 return -1; retion que [front];

void display () joints ("\n");

if (front==-1 && rear==-0)

prints ("\n Quene is Empty"); if (front < rear) for (i = front ; i < rear; it+)

prints ("H'/od", queue [i]) for (i = front; i<mao; i++)

for (i = 0; i < rear; i++)

for (i = 0; i < rear; i++)

frintf(" ++ % d"; queue [i]); Output: * * MATN MENU ** 1. Insert an element 2. Delete an element 3. Reek 4. Display the queue 5. Exist Enter your option: 3 Queue is Empty

** MAIN MENU** Insent an element 2. Delete an element 4. Display the queue 5. Erit Enter your option: 1 Enter no. to be inserted in the