OMKAR BHAITMAR 112016010 F.E.

PINGE NO.

Onkar R. Bhantkae 112016020 ECE.

DSA LaB 5: Theory.

QL. Define, Stack.

A stack is an abstract data type that serves as a collection of element. With two main principal operations: Puth, which adds an element to the collection collection and PoP, which removes the mast recently added element that was not yet removed.

Q2. What are the diffrent operations that can be performed on a stack of

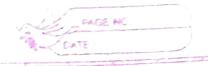
Mainty three operation are performed:

19 Push: Add an êtem in the stack.

If the stack is ful, then êt is
said to be an overflow cond?

2) POP: Removes and item from the stack.

is is Empty: Returns true if stack is empty else false



4) Peek or top: Returns top element of stack, what and the applications of stack. it Balancing of Symbols.

It Infix to Postfix | Prefix conversion.

By Redo-unda reature at many places like editors. photoshop. of forward and backward feature in web mowsers 4) Use in many algo. Likes Tower of Hanai, tree transersals, stop spain problem, Witrogram problem. 5 In Graph algo, like Topological sorting and strongly connected components 6) In memory management any modern Camputer uses stack as the primary management for a running purpose. White algo. Far Push, POP and PEEKITOP. a) Push Operation: skp1: 2 F Top = Max-1 print " o verflow: stack is full! and Exit. End If 8tep 2: 10p= Top+1 Step 3: Stack [TOP] = Element etep 4: End.

b) POP operation.

Step 1: IF Top=-1

Print " Under Flaw: Stack is empty" and Exil

End if

Step 2: Set Del - element = Stack [TOP]

Step 3: TOP=TOP-1

Step 4: Del-Element. Step 5: END.

d) PEEKITOP operation:

Step1: IF TOP = NULL, then

Print "Stack is empty"

· End If

step 2: Return Stack [TOP]

steps: END.

Stack ADT as an Array. 04.

· A stack is a collection of elements with certain operation fallowing LTFO (Last in first out) decipliple.

· A stack can be implemented using an array on linked list.

implement. Memory also sawed as pointer nat invalue



when we push () element then it store in array while POPO neterns in LIFO order. But stock using array is not dynamic It dosent grow as strink depending an needs at runhime.