Algorithms HW3 90 As enjut: starche (sta) of size n enpit: - le (integor where 0 < le < m) Algorithm: Reversestante Elements (sta, b):-And: queue cobject > queue; Il intiblize empry queue for i from 1 to b do: element: sta. popo (Teansporing top a elements queux onqueux (element) to quiu from stack) while (! June empry () do: Crownson back demonts element = grune dequireco to stack) . Orke. push (element) Azz Input: - stack (stb) of size n amput: Integra i 4 j (where o cic j (m) Algorithm - Reverse Elements (sta, i, j) std: queue colorects queue // mitialize empty queue if (i== j) or (j = i+1): for i from 1 to i: if (! sta. empty ()): queul engruque (stb. popc) for h in range (3-i): Sta. append (queue pop ()) while queue: sta-append (queue-papel+cs).

A3 -> Supert: - Stack (stb) of size of Suput: Indoses i, j (who 15 i 6 j 6 m) Algorithm: Revensionap (sta, i, i):queue colorect 2 givens: i=i-1 (convoit 1 inducts 0) 8=1-1 while sta: grune append (sta paper) tempi = None tempj - None for hin range (len (queue)): element = queue popleft()

if h == i: temp-i= element elseif h == j's som h (A)A) tempj = element quene-append (element) for k in range (len (queue)): clement = queue poplefts. If b == i; while stto. append (temp-j) Chail b==j: infino. Ara! sto append (temp-i) Olse: sta append (element) while stain and made queue. append (stb. popce) while giene: sto. approd (quem. popletto)

Ay I I mode (scoot of coverent subtrue) Agouthn Postordor Trasersal (mode): if mode == mull. Letwn 100 child = node fratchild while (! child == mull) do: Post Order Praversal (child) and = child-nest Sibling update minimum male using tors Do, node becomes value > first-child > next sibling. A50 a) We can add a pointer to modify a BST so it identifies min in O(1). We know left side of tree is men value so, to we can awate a pointer to point the value It will update every process labe insortion, updation or deletion b) For insurtion, we know BST has minimum value on left side mode as left as possible in left-subtree If we insort value in left side made as it will be minium value, we can update that pointer which contain that value which changes for every insection modified Psucodi: - If new value is less than or equal to associat node's value, sociousively insect into oft subtra you inserting, update node to point to newly inserted Value if it's smaller than cureint min value. Time Complexity will remain same.

CPPL— / / 2C. Page No. classfellow If deleted node is minimum mode, after deleting award node, new minimum will be between node in BST To update min Node, kouserse for subtree from root to find new min mode. Time complexity will be same. Part Brau Grand Child Modefied Psychocodi: - Orlete node as in regular BST and then update minimum node using tousensony left from scoot. Time complacing will be some as height ramains some we can add a founder to medy a BST DO IT 2+ will update even process take transfer updation on enda, mambers and TEST from does notifican so enimum joline we can wistate that pointer will antoin that volue value changes for essent inde moreled beyonds - It man value to loss than or equal to Her meeting what med to pant to meusly investig