① // Enqueue ⇒

```
newnode = new Node(a);
rear->next = newnode;
newnode = rear;
```

② // Priority Queue ⇒ O(1) We need best is

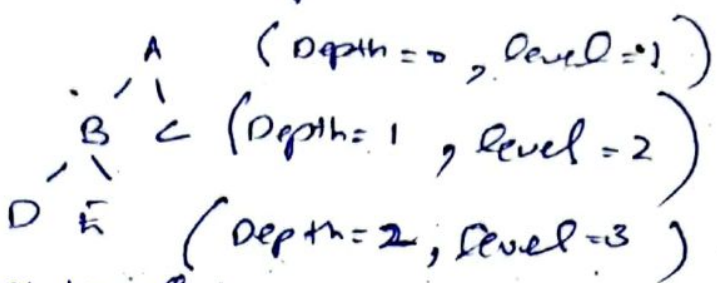
Input-restricted deque:
- insert at one end.
- delete from both end

Output-restricted deque:
- delete from one ends.
- Insert at both ends

③ // Unordered linked list
Insert → O(1)
delete → O(n)

// ordered linked list
Insert → O(n)
delete → O(1)

④
- degree → jitney bachay
- height → arrows
- legth → nodes in path − 1.



- height of tree with one node is 0.
- empty tree height can be −1

⑤
- A degree-0 node is tree leaf.
- degree-n
  All children are disjoint tree

- Almost called nearly also,
  (Each leaf in tree is either level h or h-
  It should be complete

⑥ • Full Binary tree (0,2) also called as proper, strictly or 2-tree.
• Full → (0,2) → children

Balanced Binary trees.
- difference of height no more than 1 in left and right subtree.

- Complete / Perfect → Same depth (symmetrical)
  (All levels filled except last one. / last level filled from left to right)
- Complete-Binary tree with height h has 2^h leaf nodes.
- Complete Binary tree with height h has $2^{h+1}-1$ number of nodes.
- Complete Binary tree with nodes n has height $\log_2(n+1)-1$

Tree Traversal :-
Breadth-First
Depth-First (inorder, postorder, preorder)

- Binary tree (est) of height h is atleast $h+1$ and at most $2^{h+1}-1$.

- n elements sorted in BST. Complexicity to search a key in the tree.
  O(n)
- n elements sorted in Balanced tree. complexicity to search a key in tree.
  O(log n)