"DRY RUN"

NAME:- TALHA   RASHID

TITLE:- Emergency Room Queue Management System

1. insertAtEnd (101)

Head -> [101] <- Tail

(prev=null) <-> [101] <-> (next=null)

Representation:

HEAD: patientID = 101, prev = NULL, next = NULL

2. insert AtEnd (102)

Head -> [101] <-> [102] <- Tail

[101].prev = NULL, [101].next -> [102]

[102].prev -> [101], [102].next = NULL

3. insert At Begining (200)

Head -> [200] <-> [101] <-> [102] <- Tail

[200].prev = NULL [200].next -> [101]

[101].prev -> [200], [101].next -> [102]

4. InsertAt Position (150, 2)

Position is 2 (1-based), so insert 1st node (after 200), before 2nd node

Head -> [200] <-> [150] <-> [102] <- Tail

Pointers updated

- new [150].prev → [200]
- new [150].next → [101]
- [200].next → [150]
- [101].prev → [150]

5. DeleteFromBegning ()

Remove head .node (200).
Head → [150] <-> [101] <-> [102] <- Tail
Pointers:
- new head is [150], [150].prev = NULL

6. InsertAtEnd (300)
Head → [150] <-> [101] <-> [102] <-> [300] <- Tail
Final pointers consistent
- head = node with patientID (prev = NULL)
- tail = node with patientID (next=NULL)

After Step6 answers:
(a) Head patient ID :
(b) Tail patient ID :
(c) Forward traversal (head → tail): 150 → 101 → 102 → 300
(d) Backward traversal (tail → head): 300 → 102 → 101 → 150

OUTPUT AFTER PERFORMING OPREATIONS

D:\Practice codes\Hospital Patient Queue\Hospital Patient Queue.exe

```
=== Emergency Room Queue Management System ===
Normal patient 101 added to the end of the queue.
Normal patient 102 added to the end of the queue.
Critical patient 200 added to the front of the queue.
Patient 150 inserted at position 2.
Patient 200 has been treated and removed from the queue.
Normal patient 300 added to the end of the queue.

After operations:
HEAD -> [150] <-> [101] <-> [102] <-> [300] <- TAIL
```