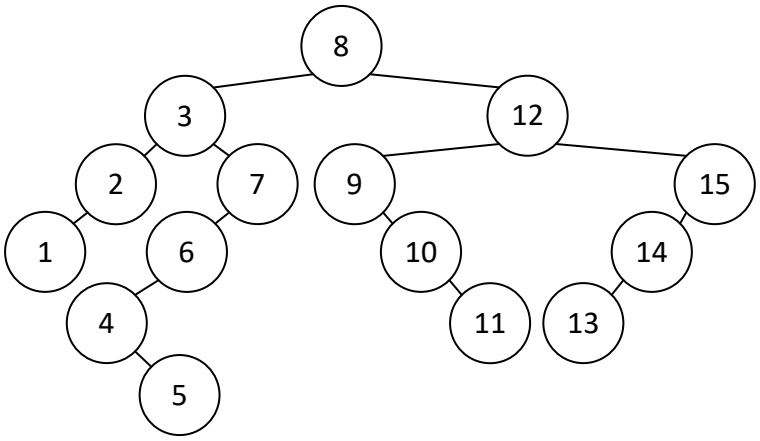
Units 14, 15, 16

Data Abstractions

1.

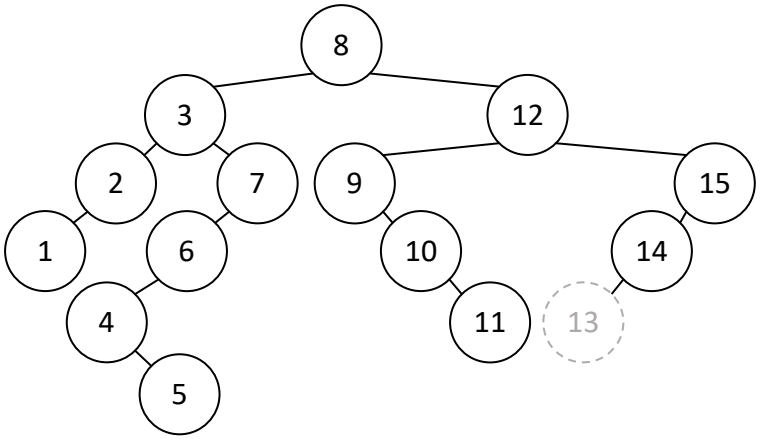
Ans:

(a)

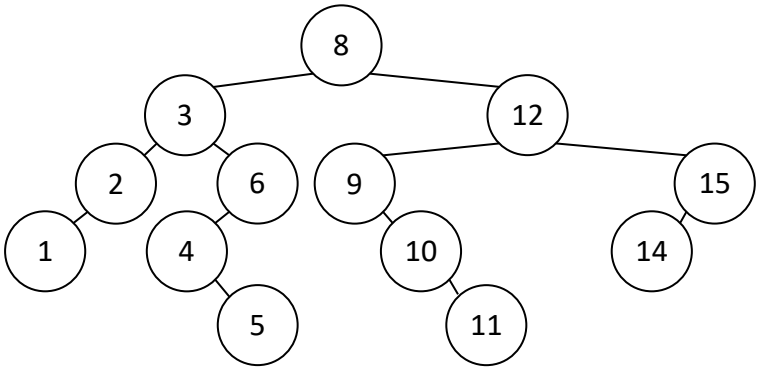


(b) 1, 2, 5, 4, 6, 7, 3, 11, 10, 9, 13, 14, 15, 12, 8

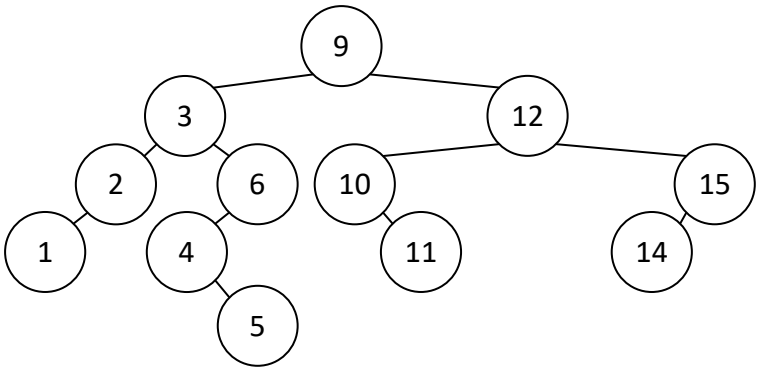
(c) -Delete 13



-Delete 7



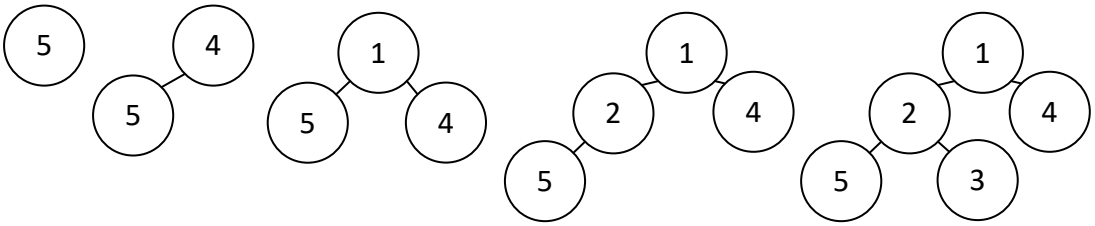
-Delete 8



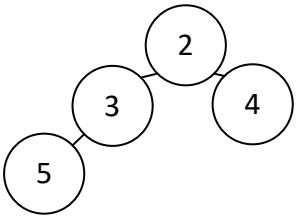
2.

Ans:

(a)



(b) The array after extracting the minimum element (**1**) is [2, 3, 4, 5].



3.

Ans:

(a)

- Update the next pointer of P (last node of List A) to point to the first node of List B (I).
- Update the prev pointer of I (first node of List B) to point to P.
- Update the next pointer of L (last node of List B) to point to T (first node of List A).
- Update the prev pointer of T (first node of List A) to point to L.
  T<->R<->O<->P<->I<->C<->A<->L, with L connected back to T and T connected back to L.

(a) **O(1)** (only modify a constant number of pointers).