YASH GUPTA

SR0 2000 l023

$\frac{8-1}{6}$. Initially empty

Insert   19, 34, 23, 9, 5, 19, 24

Delete   23, 19

- Inserting - (19)

(19)

- Inserting 34

(19) — (34)

- Inserting 23

(19) — (34) — (23)

- Inserting 7

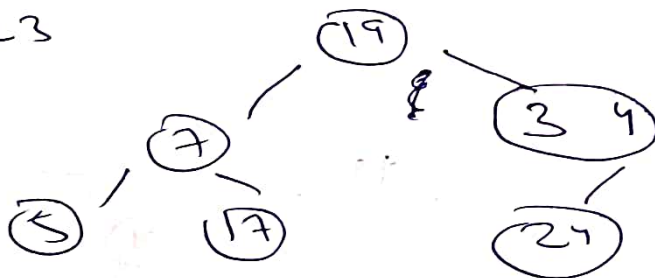(19) → (7), (19) — (34) — (23)
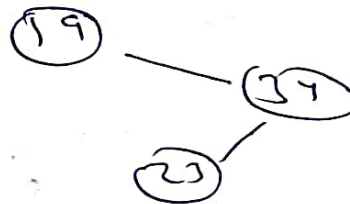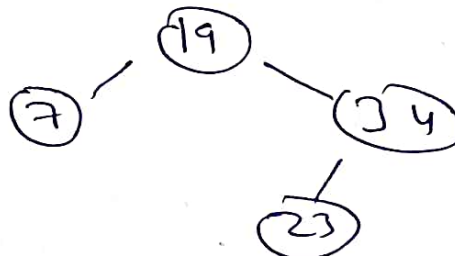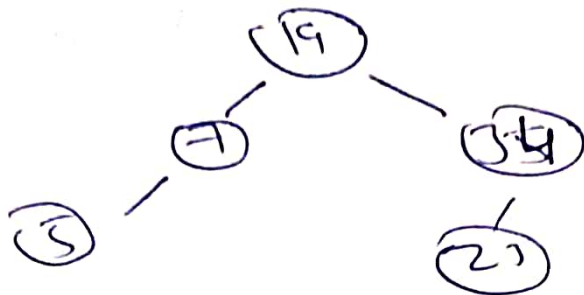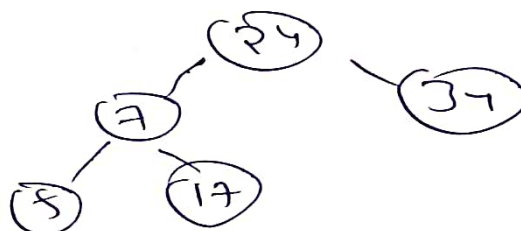
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Insert 5

• Insert 17

• Insert 24
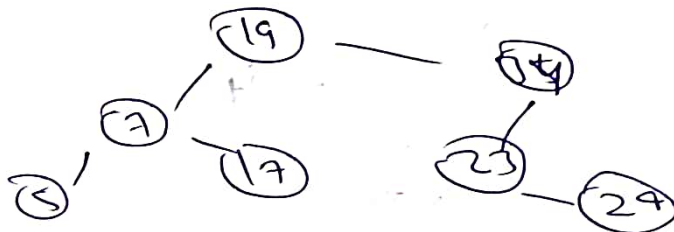
• Delete 23

• Delete 19
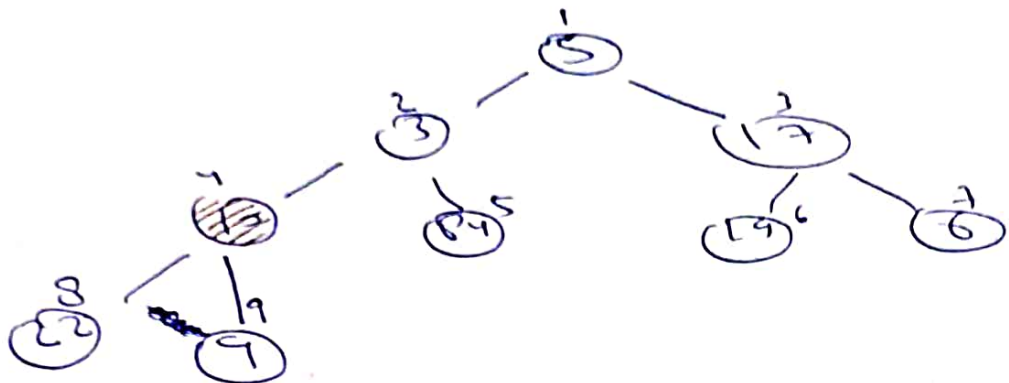
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Q-2

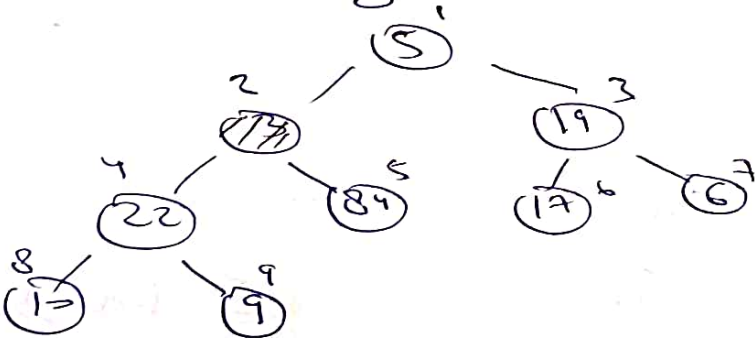(a)   A = | 5 | 3 | 17 | 10 | 84 | 19 | 6 | 22 | 9 |

for i = 4

for i = 3

for i = 2
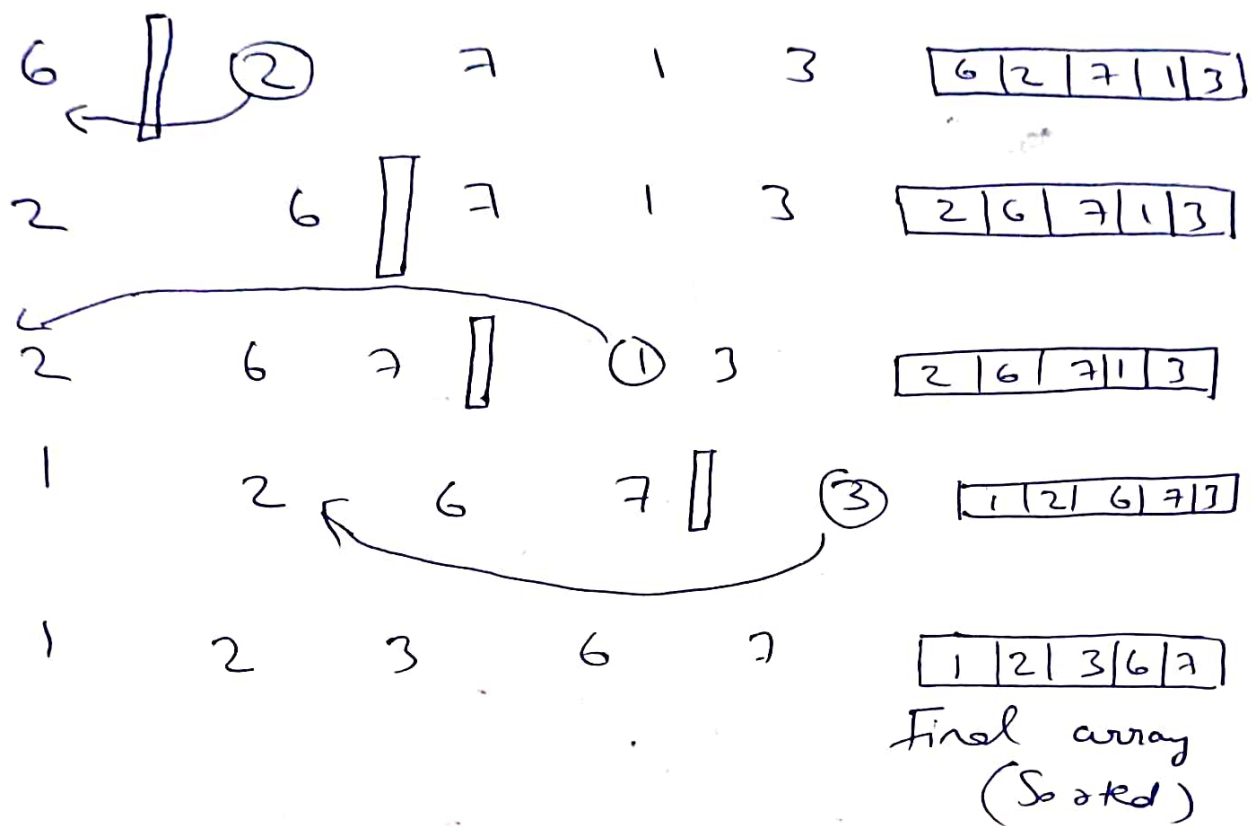
for i = 1

Q-2
(b)
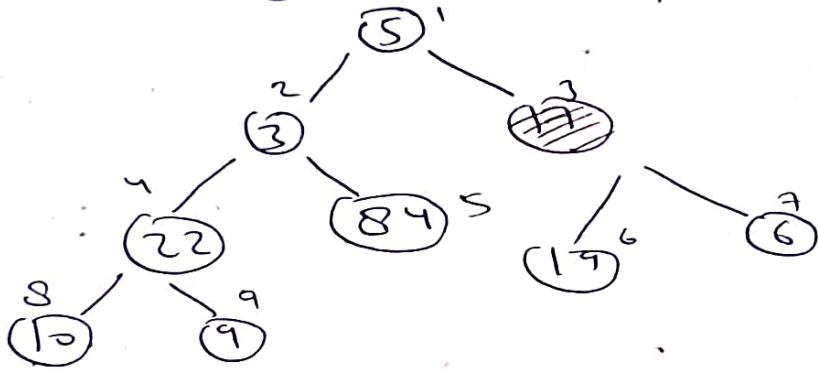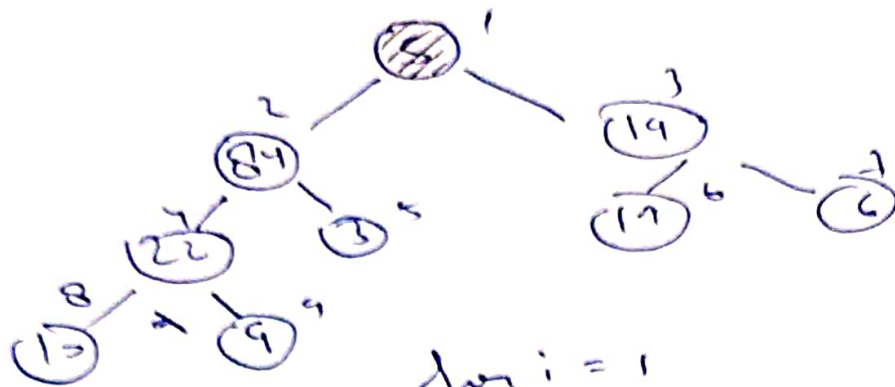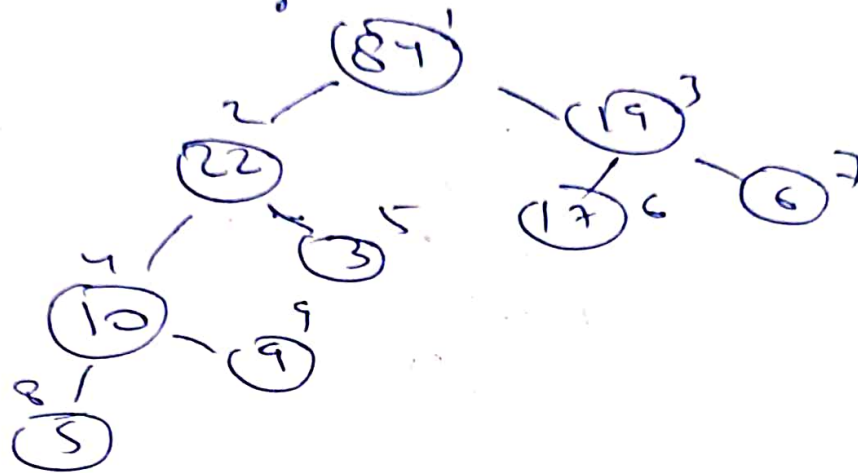
Considering A[0] is sorted
Then we will check for every i whether
the array is sorted until then or not.

6 ↓ ② 7 1 3 | 6 | 2 | 7 | 1 | 3 |

2 6 ↓ 7 1 3 | 2 | 6 | 7 | 1 | 3 |

2 6 7 ↓ ① 3 | 2 | 6 | 7 | 1 | 3 |

1 2 6 7 ↓ ③ | 1 | 2 | 6 | 7 | 7 |

1 2 3 6 7 | 1 | 2 | 3 | 6 | 7 |
Final array
(Sorted)

(c)

Best case - O(n)
Average Case - O(n²)
Woost Case - O(n²)

Q-3
(b)

D-f-S

(A) — (B) — (D) — (f) — (E) — (C)
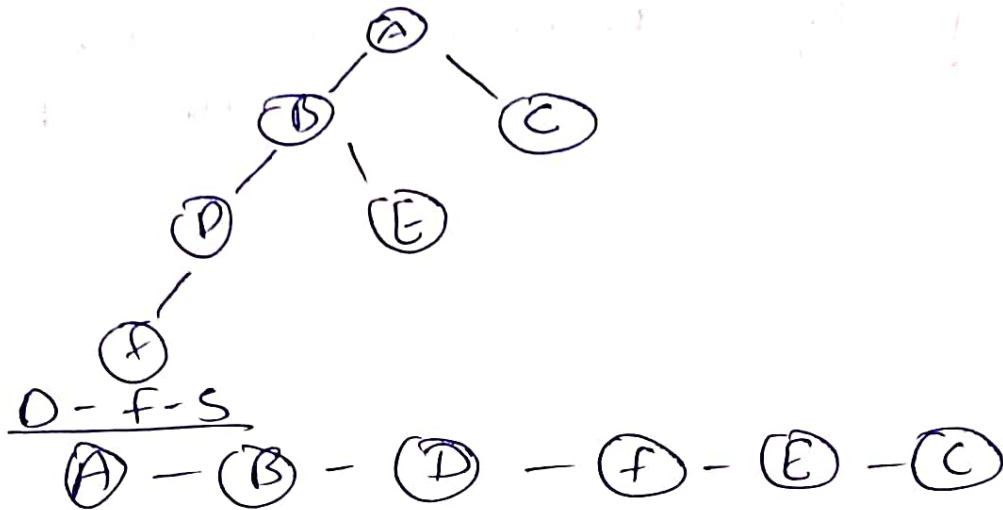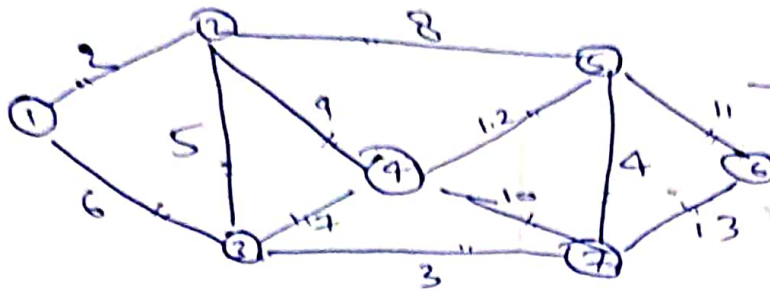
Q-3
(a)

- Divide [0, n) into k equal buckets
- Distribute the n input values into buckets
- Sort each bucket
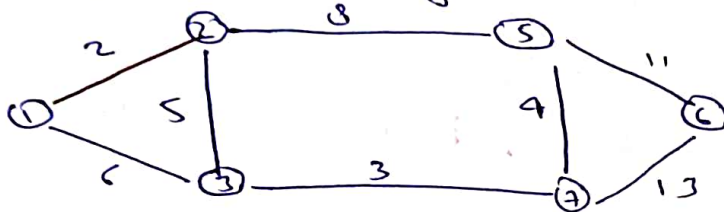- Go through the buckets in order, listing elements in each one.

Q-4
(2)

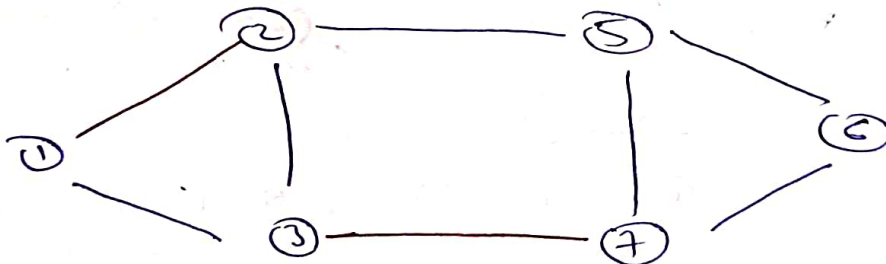| Edge	Size
1-2	2
3-7	3
5-7	4
2-3	5
1-3	6
4-3	7
2-4	9
4-5	8
5-6	11
4-5	12
6-7	13

By selecting the shortest path, and not forming a cycle we form Kruskal's Spanning tree
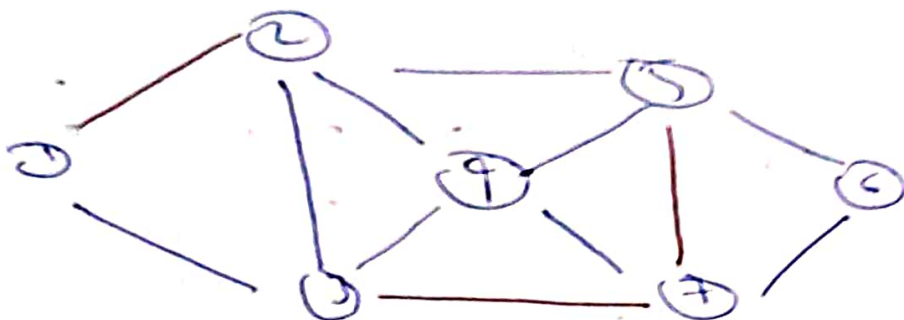
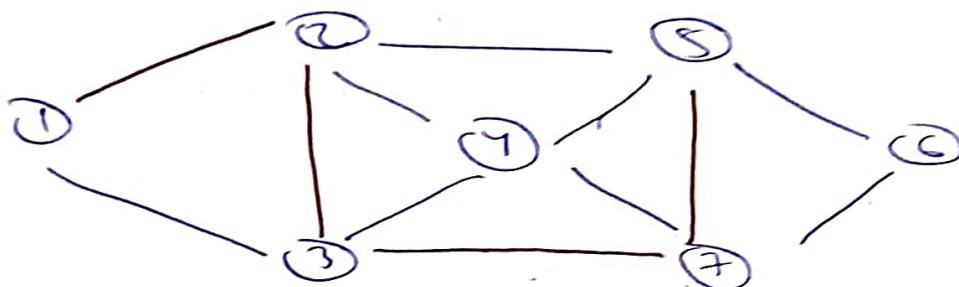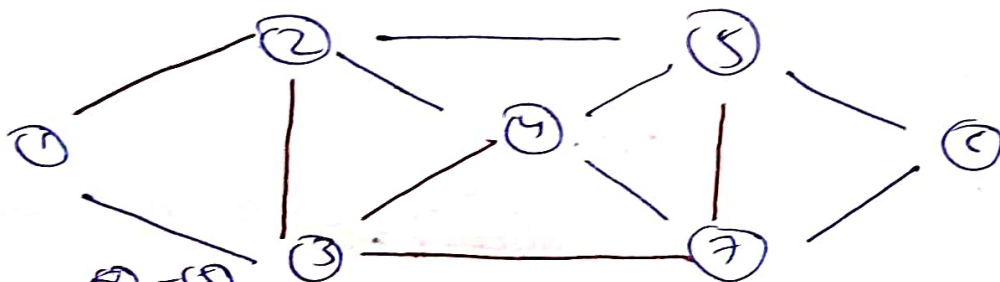- ① - ② is selected first

- ③-⑦ is selected

- ⑤ - ⑦
  is selected next

- ② - ③ is selected

- ① - ③ can't be selected , ④-③ is selected

- ② - ④ in ③ - ⑦ , ② - ④ , ② - ⑤ , & ④ - ⑦ can't be
  selected so ⑤ - ⑥ is selected
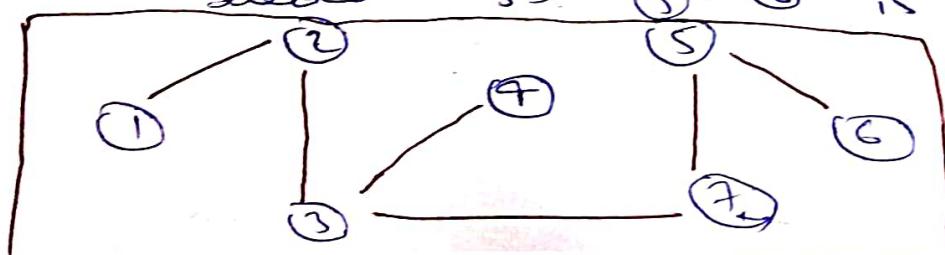
  Minimum spanning tree

0-4

(5)

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Mn no of edges to connect 700 vertices

is 699.