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Paper: Data structures and algorithms

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Degree: BSSE

Q18 Sort the given list using Selection Sort.

56, 59, 45, 40, 43, 55

Solution $\Rightarrow n = 6 - 1$
step = 5

step #1

elements 59

56, (59), 45, 40, 43, 55

56, 59, 45, 40, 43, 55

step #2: element 45

56, 59, (45), 40, 43, 55

56, 45, 59, 40, 43, 55

45, 56, 59, 40, 43, 55

step #3: element 40

45, 56, 59, (40), 43, 55

45, 56, 40, 59, 43, 55

43, 40, 56, 59, 43, 55

40, 45, 56, 59, 43, 55

step #4: elements (43)

40, 45, 56, 59, (43), 55

40, 45, 56, 43, 59, 55

40, 45, 56, 59, 55

40, 43, 45, 56, 59, 55

Q1:

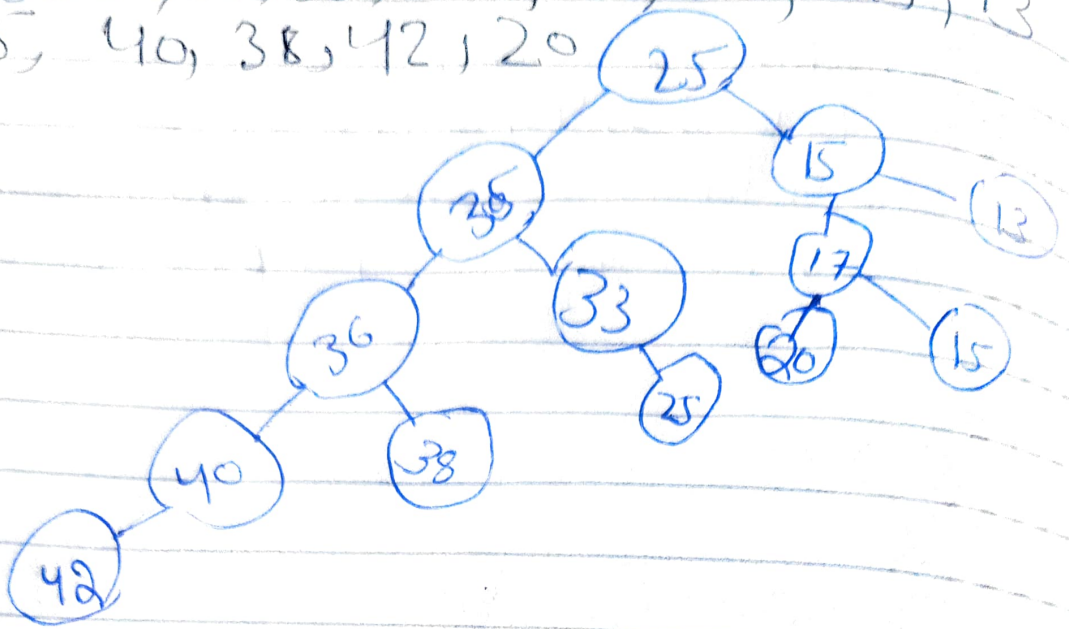
Step #5, elements 55

40, 43, 45, 56, 59, (55)

40, 43, 45, 50, 55, 59

40, 43, 45, 58, 56, 59

Q 28 25, 15, 35, 17, 33, 36, 25, 13
15, 40, 38, 42, 20



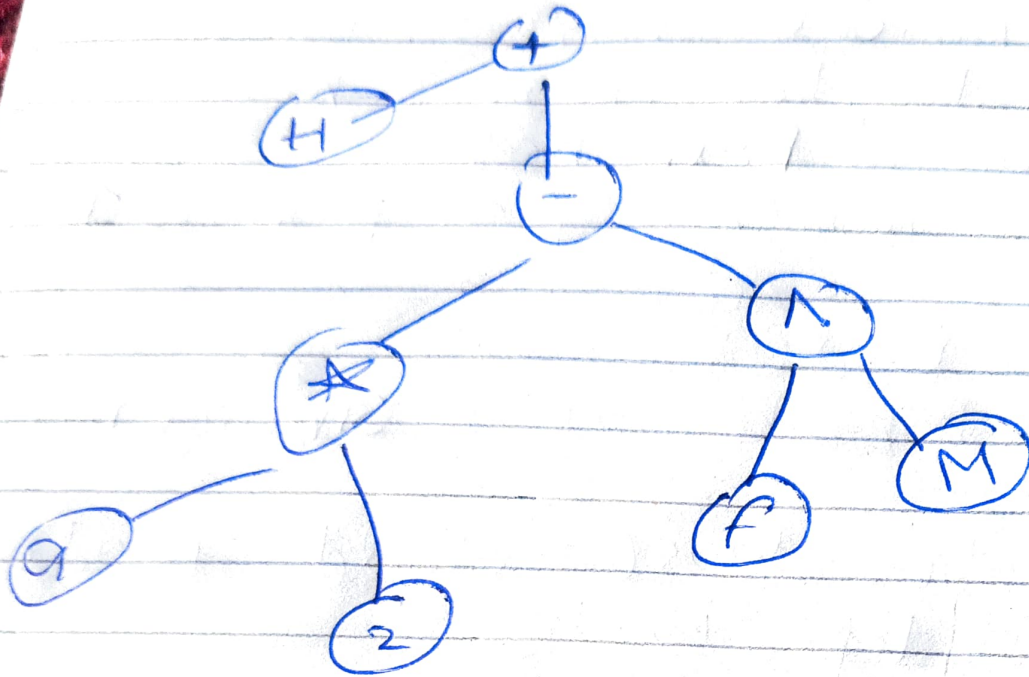
42, 40, 36, 38, 35, 33, 25, 25, 20, 17, 15, 15, 13

Q38 = Fill in the blanks.

- ① elements of a tree are called Nodes
- ② The graphical line drawn between Nodes of a tree is called Branches
- ③ Level number of a Root is 1
- ④ All the nodes with the same level number belong to sibling node
- ⑤ The left most child Node is oldest/left Node
- ⑥ The Right most child Node is youngest/Right Node
- ⑦ A Tree is a Non linear data structure
- ⑧ An ordered set of ordered trees is called a Plan Tree.

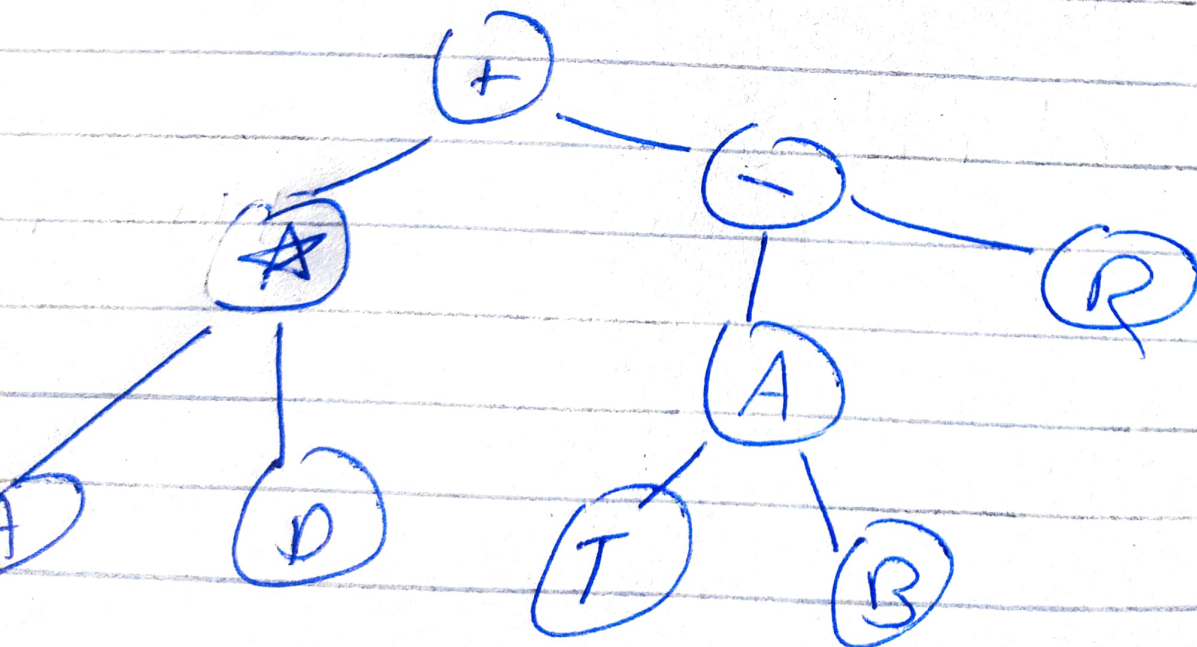
Q38

(i) $H + G * H + G * 2 - F \wedge M$



(ii)

$A * D + * T \wedge B - R$



Q 4:

(a) In order Traversal:-

H, t, G, 1, 2, -1, F, A, M

Pre-order Traversal:-

t, H, -1, x, G, 2, A, F, m

Post-order Traversal:-

H, G, 2, x, f, m, A, -1, t

(b)

In order Traversal

A, x, D, t, T, A, B, -1, R

Pre-order Traversal

A, D, x, T, B, n, R, -, T.