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Semester: 3rd
Degree: BSSE
Subject: Data Structure
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Q no 5:

Fill in the blanks?

Ans:

- (i) Nodes
- (ii) Edges / Branches
- (iii) Zero (0)
- (iv) Same Family / Sibling nodes / Same generation
- (v) Oldest Brother / Left Child.
- (vi) Youngest brother / Right Sibling
- (vii) Non linear
- (viii) Forest / plan Tree

Q no 1: Sort the given list using Selection Sort?

56, 59, 45, 40, 43, 55

Solution = $n = 6 - 1$

Step = 5

Step # 1

element 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, ~~59~~ 40, 59, 43, 55

45, 40, 56, 59, 43, 55

40, 45, 56, 59, 43, 55

Step # 4 :- element 43

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

40, 45, 56, 43, 59, 55

40, 45, 43, 56, 59, 55

40, 43, 45, 56, 59, 55

Step # 5 :- element 55

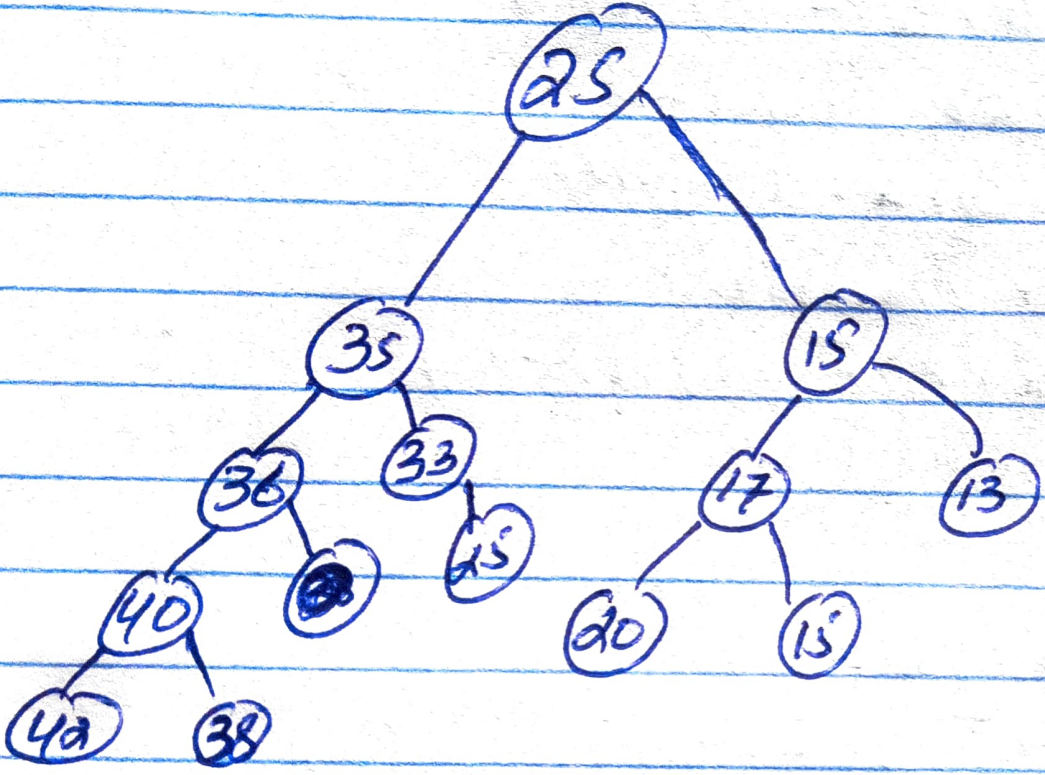
40, 43, 45, 56, 59, (55)

40, 43, 45, 56, 55, 59

40, 43, 45, 55, 56, 59

Q nodes:

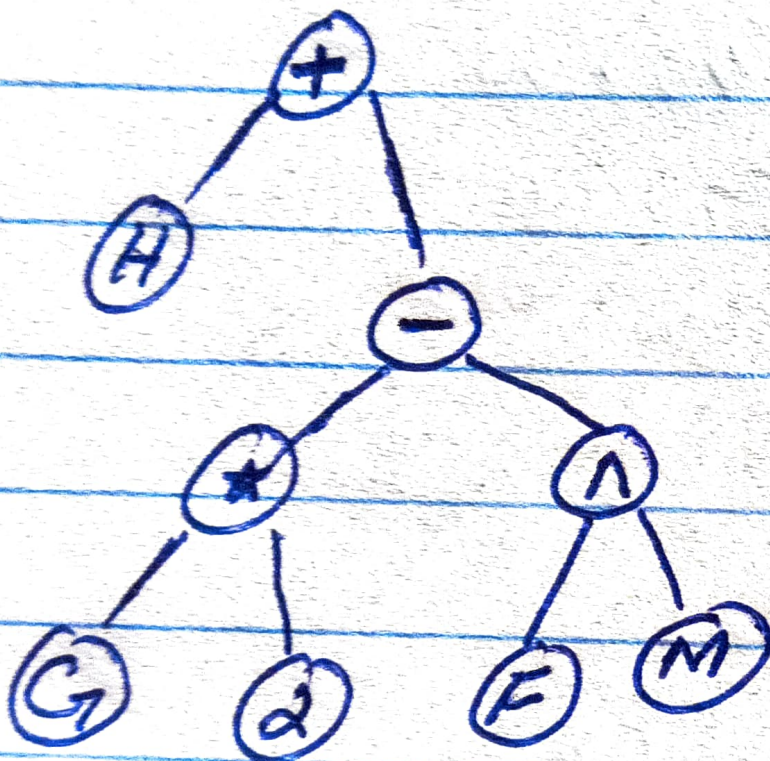
25, 15, 35, 17, 33, 36, 25, 13, 15, 40, 38, 42, 20



Verification:-

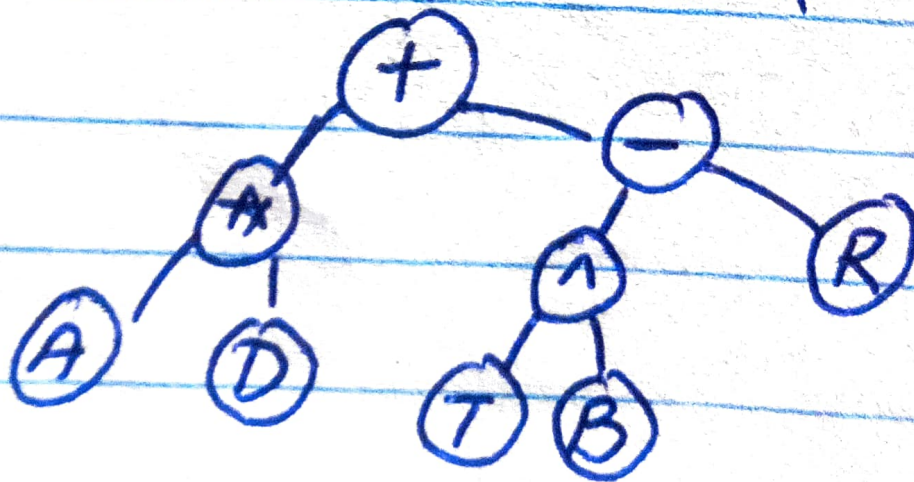
42, 40, 38, 36, 35, 33, 25, 25, 20, 17, 15, 15, 13

Q no 3:- (P) $H + G * 2 - F \wedge M$



(ii)

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



Q no 4:

(a): In order Traversal:

$H, +, G, *, 2, -, F, A, M$

:- Pre-order Traversal:-

$+ , H , - , * , G , 2 , A , F , M$

post-order Traversal:-

$H , G , 2 , * , F , M , A , - , +$

(b):

:- In-order Traversal

$A, x, D, +, T, A, B, -, R$

:- Pre-order Traversal

$+ , x , A , D , - , A , T , B , R$

:- Post-order Traversal

$A, D, x, T, B, A, R, -, +$