Exam: FINAL

Subject: Data Structure

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Semester: 3rd

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Ans(1)

Sort the given list using insertion Sort.

56, 59, 45, 40, 43, 55

$n = 6$

Steps = 6-1 = 5

Step✗1:- Element = 59.

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:- Elemen=40

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

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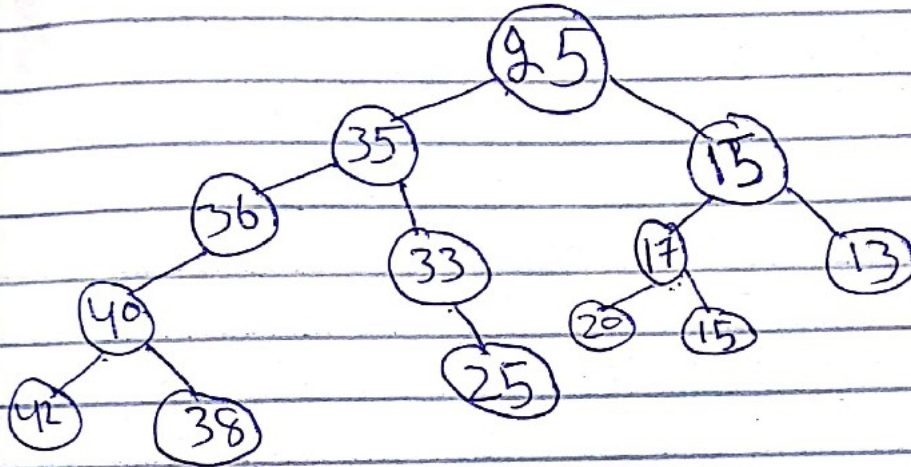
40, 43, 45, 55, 56, 59

(Ans) (1)

Ans ②

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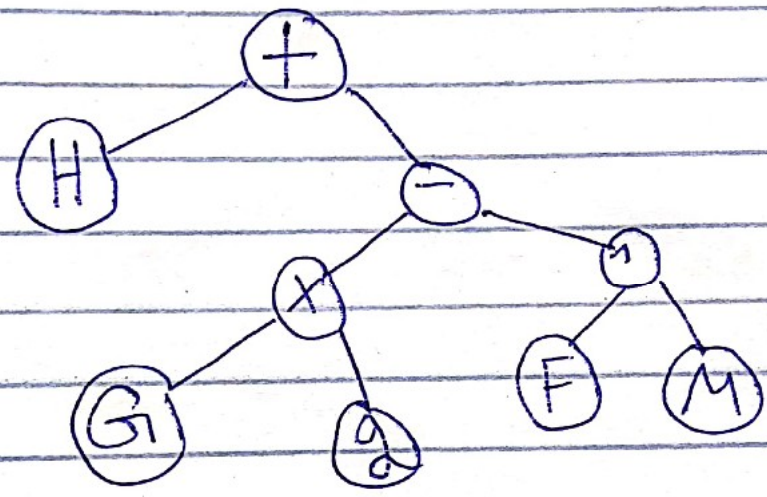15, 40, 38, 42, 20

varification using in order
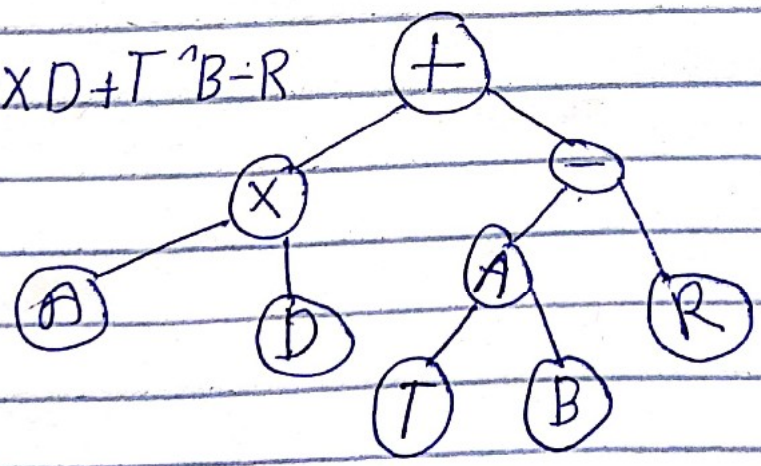traversal:-
42, 40, 38, 36, 35, 33, 25, 25, 20, 17,
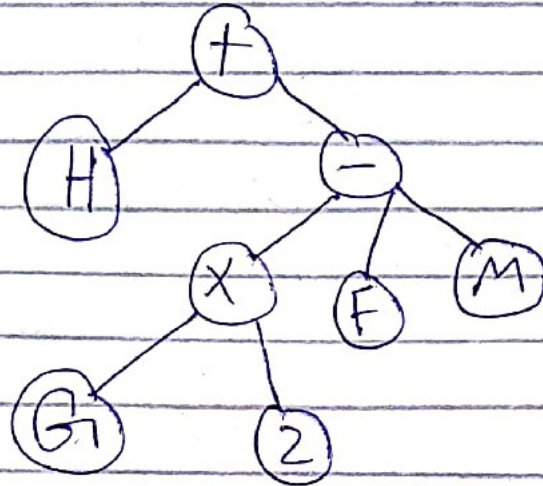
15, 15, 13

Ans 2

Ans (3) (i)

$$H + G \times 2 - (F \char`^ M)$$

(ii) $A \times D + T \char`^ B - R$

Ans (4) (i)

in order traversal :—

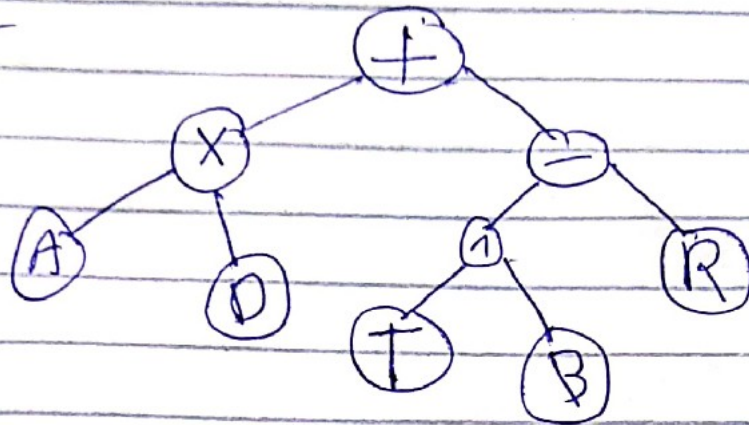H , +, G , X , 2 , — , F , ^ , M

pre-order traversal :—

+ , H , — , X , G , 2 , ^ , F , M

post order traversal :—

H , G , 2 , X , F , M , ^ , — , +

Ans

Ans 4 (ii)

in order traversal :-

A, X, D, +, T, ^, B, -, R

PRE order traversal :-

+, X, A, D, -, ^, T, B, R

Post-order traversal :-

A, D, X, T, B, ^, R, -, +

Ans

Ans (5)

fill in the blanks

① Nodes

② Branch

③ Zero

④ Same family

⑤ older

⑥ younger

⑦ Non - linear

⑧ forest