

## Question I

Minimal spanning trees using Kruskal's Algorithm.

| Edge   | HI  | FG  | OF  | JO  | LI  | IJ  | AL  | IF | LJ | GH | LD  | CJ | EH  | BC | AB | DE | AL |
|--------|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|----|-----|----|----|----|----|
| weight | 10  | 12  | 20  | 20  | 21  | 23  | 25  | 25 | 25 | 30 | 35  | 40 | 45  | 55 | 60 | 70 | 80 |
| add    | Yes | Yes | Yes | Yes | Yes | Yes | Yes | NO | NO | NO | Yes | NO | Yes | NO | NO | NO | NO |

$$\text{Vertices} = 11$$

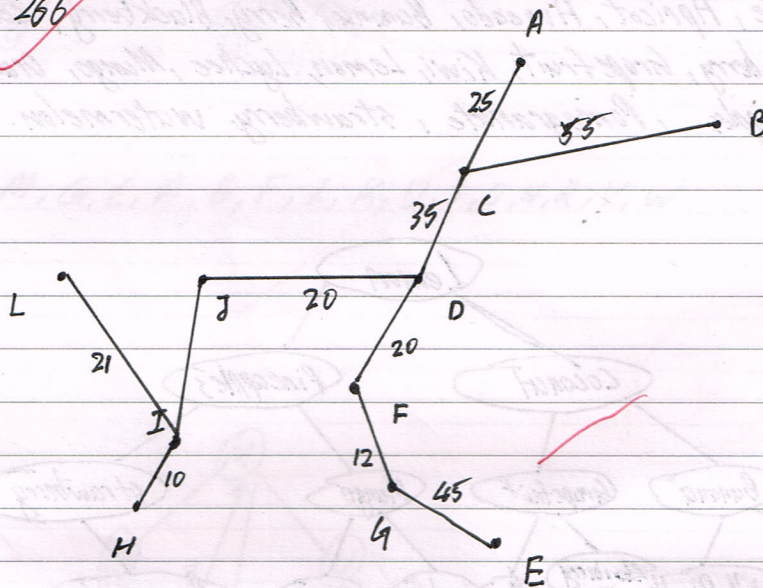
$$\text{Edges} = n - 1$$

$$= 11 - 1$$

$$= 10 \text{ edges.}$$

$$\text{Total weight} = 10 + 12 + 20 + 20 + 21 + 23 + 25 + 35 + 45 + 55$$

$$= 266$$



5

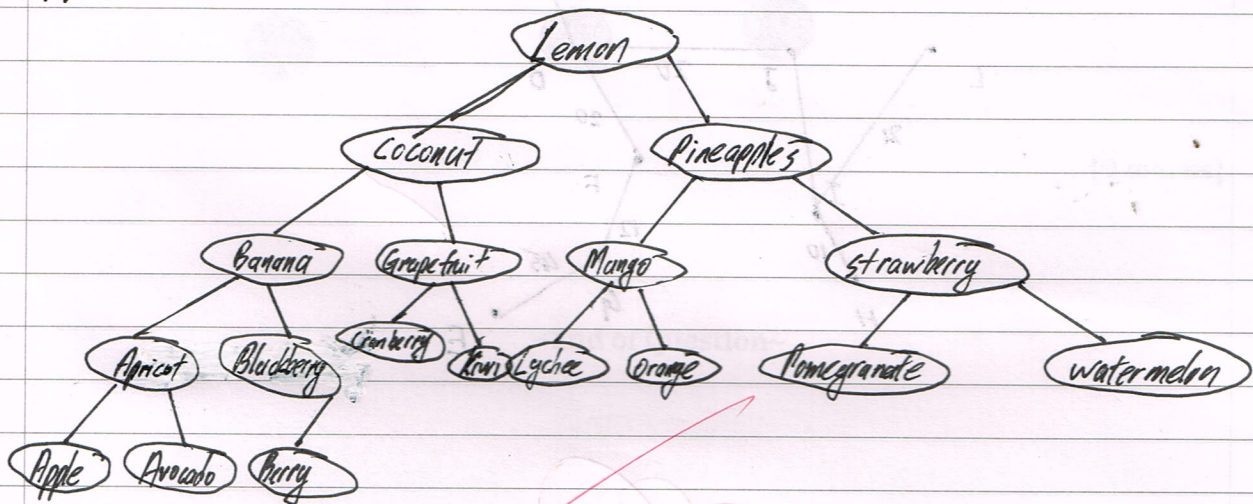
## Question 2

Draw a binary search with the list below:

Mango, Pineapples, coconut, Grapefruit, Kiwi, Avocado, watermelon  
 Apple, Orange, strawberry, Banana, Apricot, Pomegranate, Cranberry,  
 Lemon, Blackberry, Berry, Lychee.

∴ if the list rearrange by the name ~~of~~ and change it to "ASCII" Code  
 (Exp: 'A' = 0100 0001 'B' = 0100 0010) it will become:

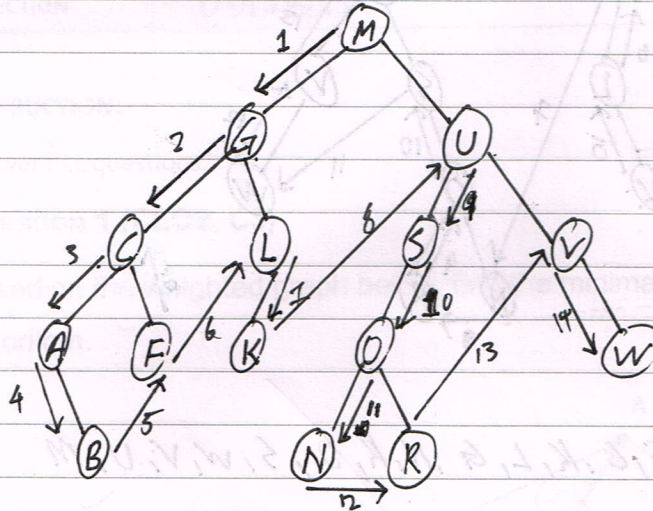
Apple, Apricot, Avocado, Banana, Berry, Blackberry, coconut,  
 Cranberry, Grapefruit, Kiwi, Lemon, Lychee, Mango, Orange,  
 Pineapples, Pomegranate, strawberry, watermelon.



## Question 3.

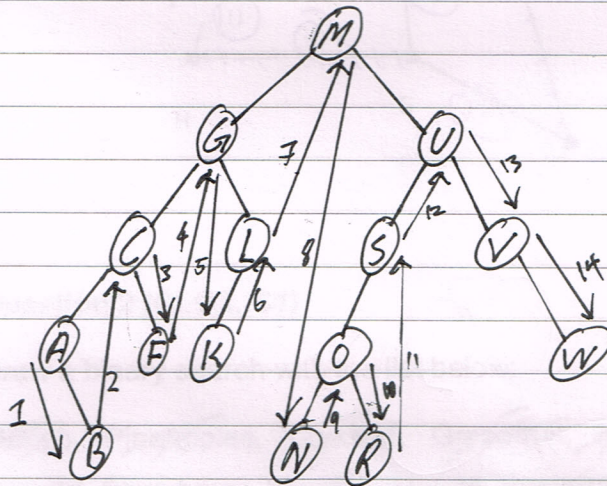
→ Preorder

∴



∴ Preorder = M, G, L, A, B, F, L, K, U, S, O, N, R, V, W

→ Inorder



∴ Inorder = A, B, C, F, G, K, L, M, N, O, R, S, U, V, W