Mid Term Exam

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Course : CSE225

Section : 05

Date : 12-08-2021

Ans to the QNO-3(c)

Construction of Binary tree

preorder : 15, 13, 12, 11, 14, 17, 16, 19, 18, 20

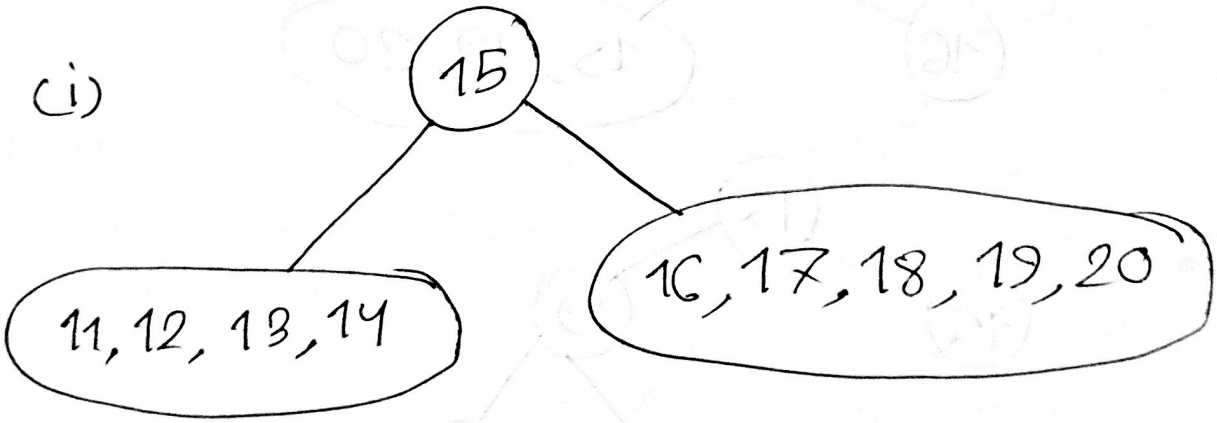
↓

Root.

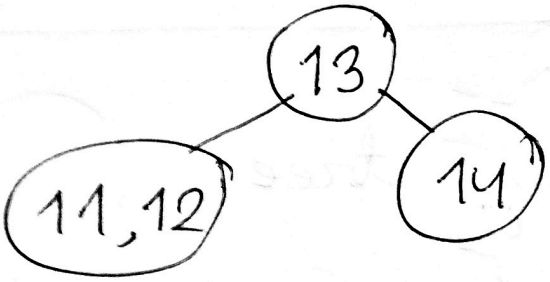
inorder : 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Left sub tree — Root — Right sub tree.

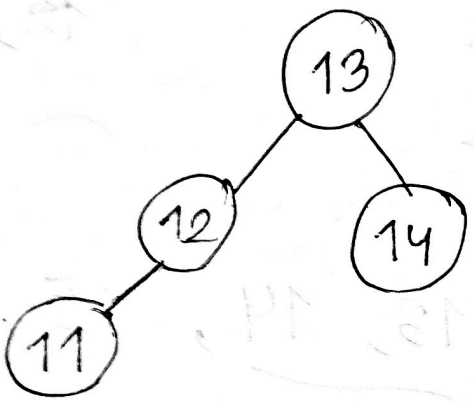
(i)



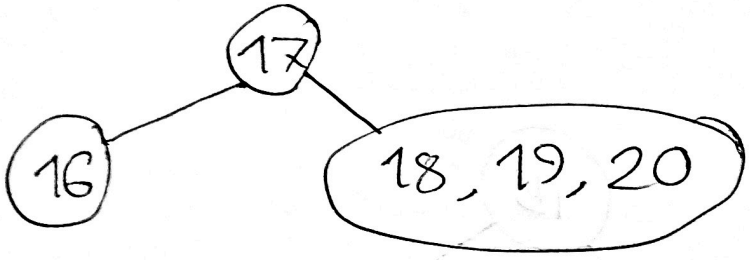
(ii) Construct left sub tree:



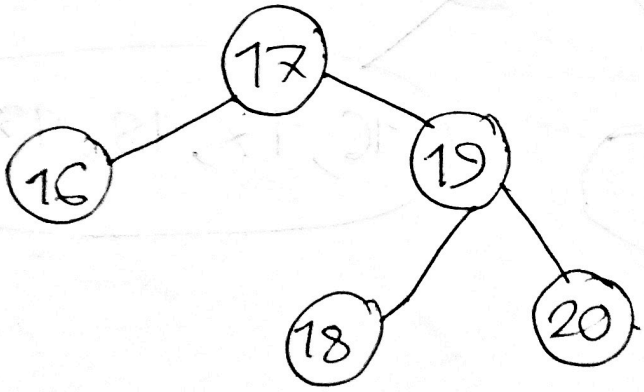
⇒

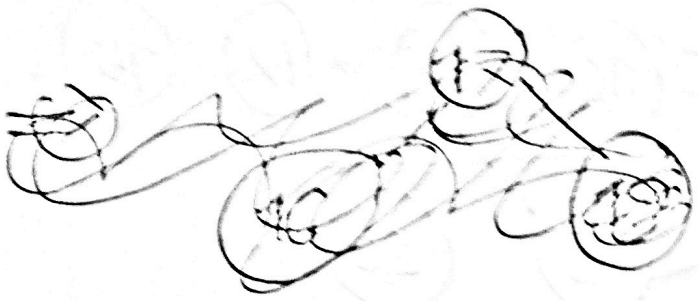


(iii) Construct right sub tree:

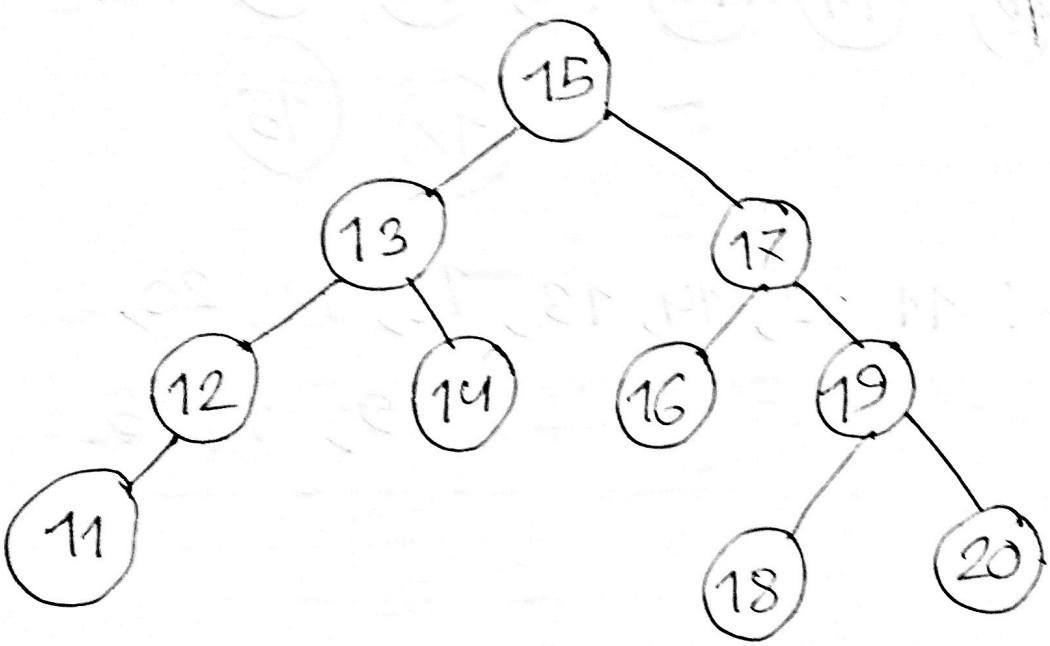


⇒



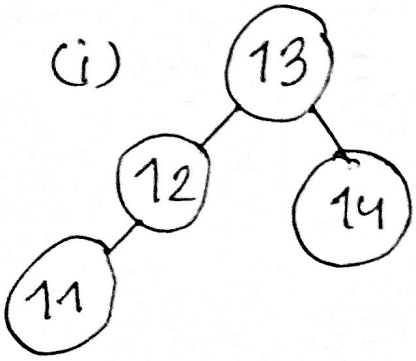


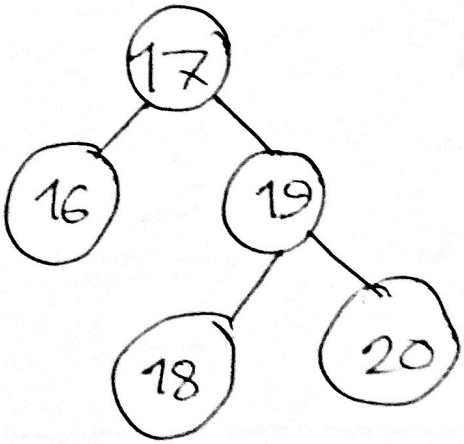
∴ final binary tree is:



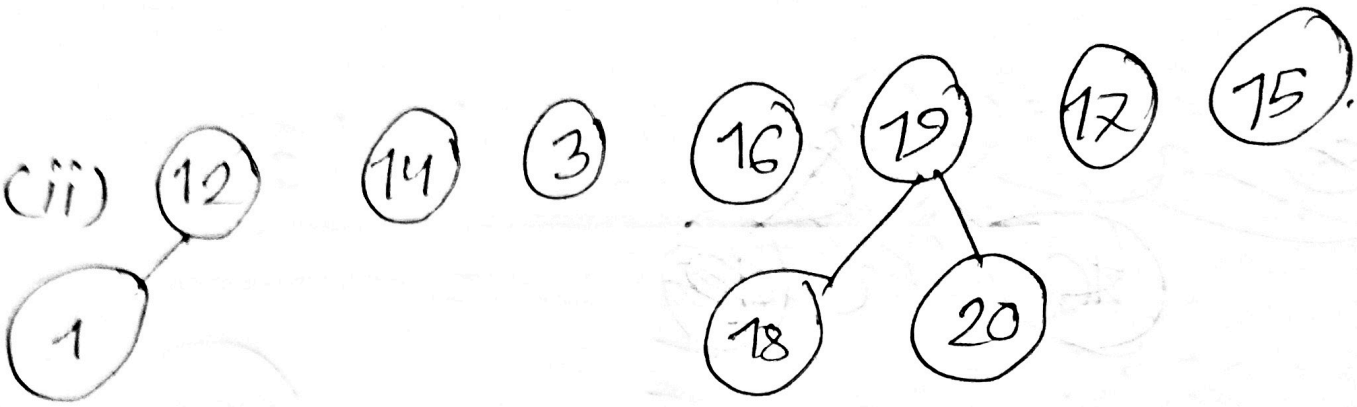
∴ Postorder traversal: Left, Right, Root.

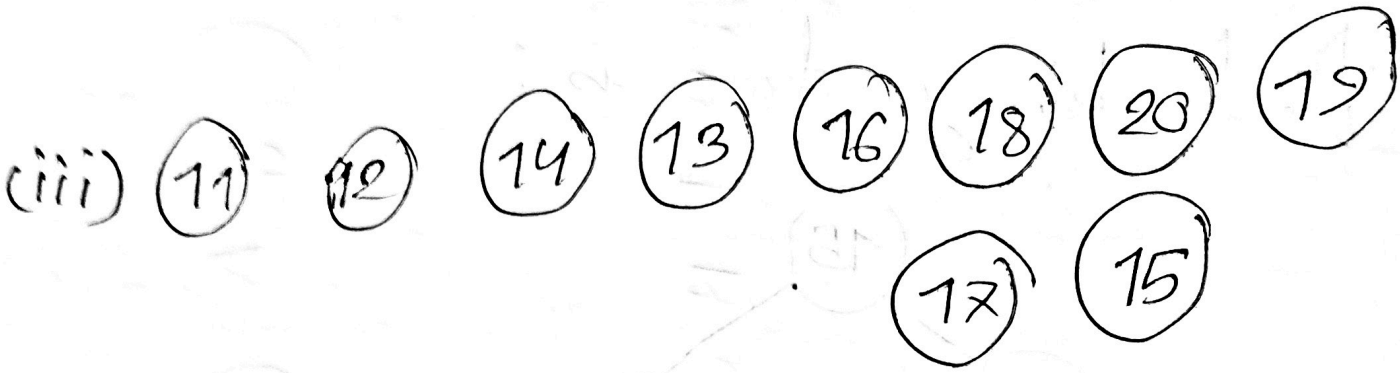
(i)





15

(ii) 

(iii) 

postorder : 11, 12, 14, 13, 16, 18, 20, 19, 17, 15.

Ans to the Q.NO: 02 (a)

P : 10, 2, 8, *, +, 3, -,)
(1) (2) (3) (4) (5) (6) (7) (8)

Symbol	Scanned	STACK.		
(1)	10	10		
(2)	2	10	2	
(3)	8	10	2	8
(4)	*	10	16	
(5)	+	26		
(6)	3	26	3	
(7)	-	23		
(8)	)			

Ans to the ONO - 1(a)

H	1
*	2
A	3
+	4
(	5
(	6
B	7
+	8
C	9
)	10
^	11
D	12
)	13
)	

	Symbol Scanned	STACK	Expression X
(1)	H	(	H
(2)	↑	(↑	H
(3)	A	(↑	HA
(4)	+	(+	HA↑
(5)	(	(+(	HA↑
(6)	(	(+(	HA↑+
(7)	B	(+(	HA↑+B.
(8)	+	(+	HA↑+B.
(9)	C	(+	HA↑+BC.
(10)	)		HA↑+BC+
(11)	^	^	HA↑+BC+
(12)	D	^	HA↑+BC+D

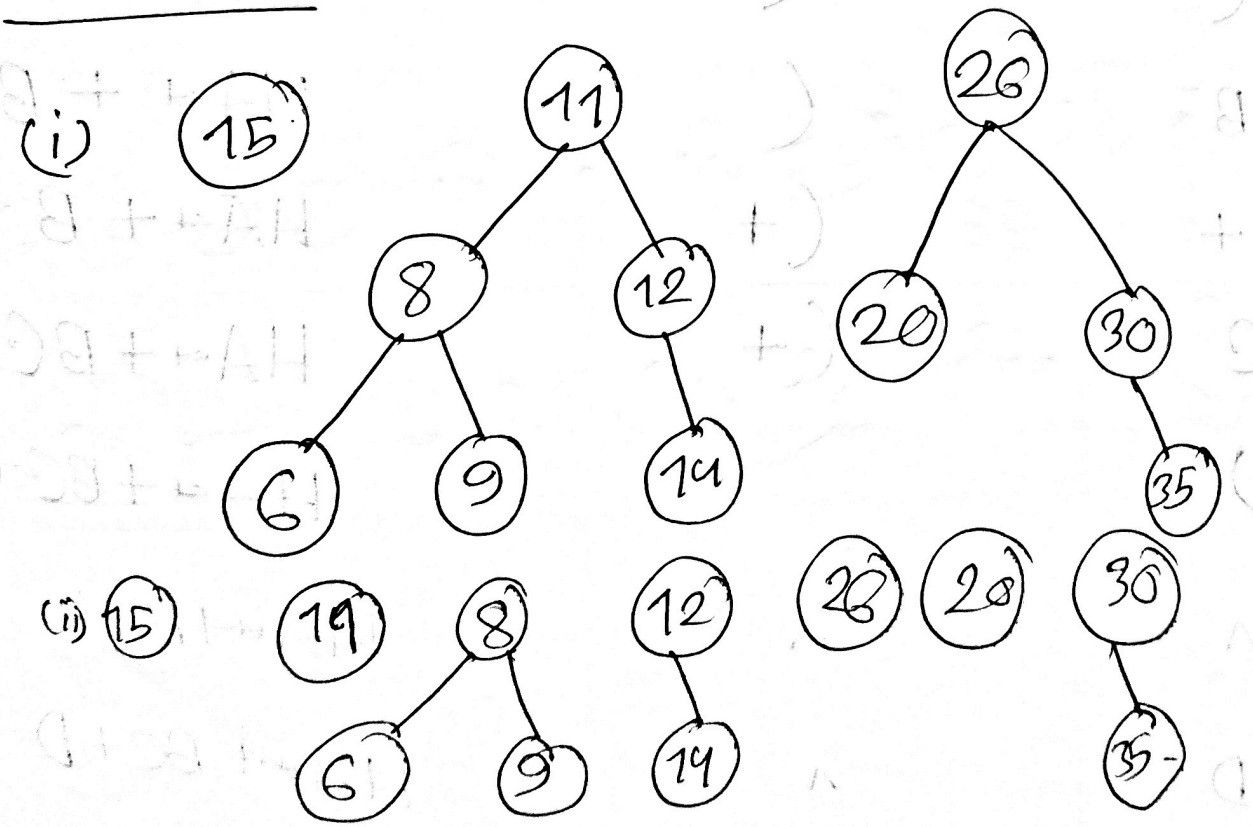
(13)) HA↑+BC+D↑

∴ Post fix Expression is : HA↑+BC+D↑

(Ans).

Ans to the QNO: 3(a)

preorder : root, left, right.

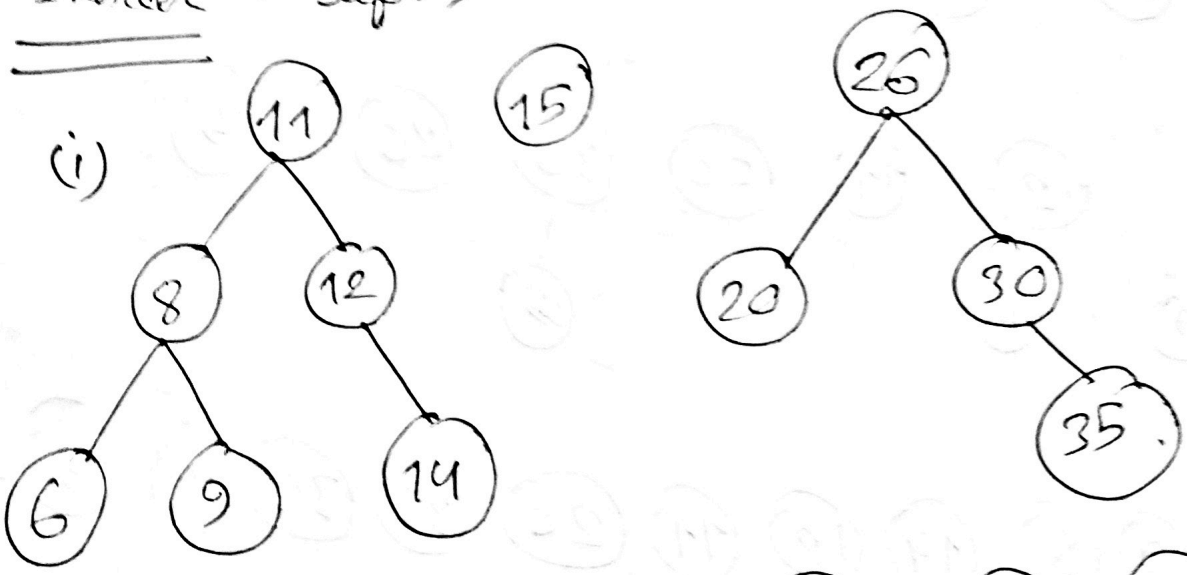


(iii) 15 11 8 6 9 12 14 26 20 30 35.

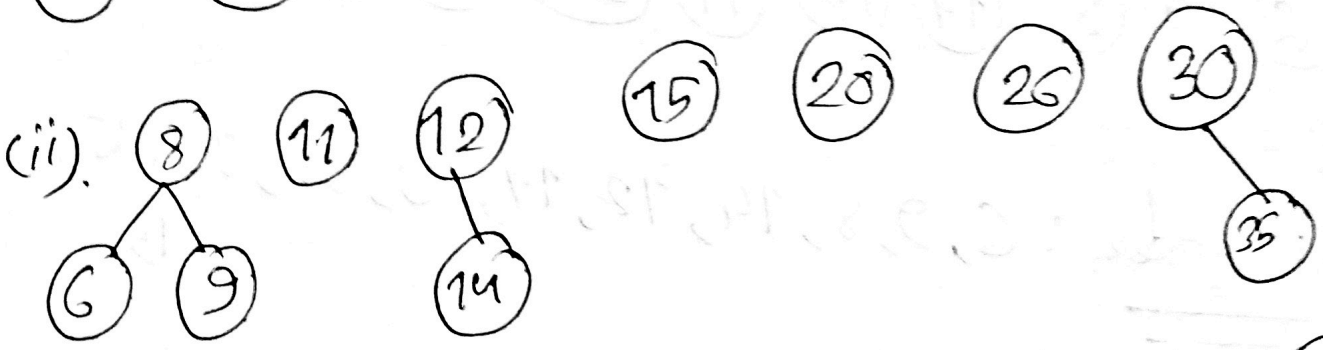
preorder : 15, 11, 8, 6, 9, 12, 14, 26, 20, 30, 35

Inorder : left, root, right.

(i)



(ii).

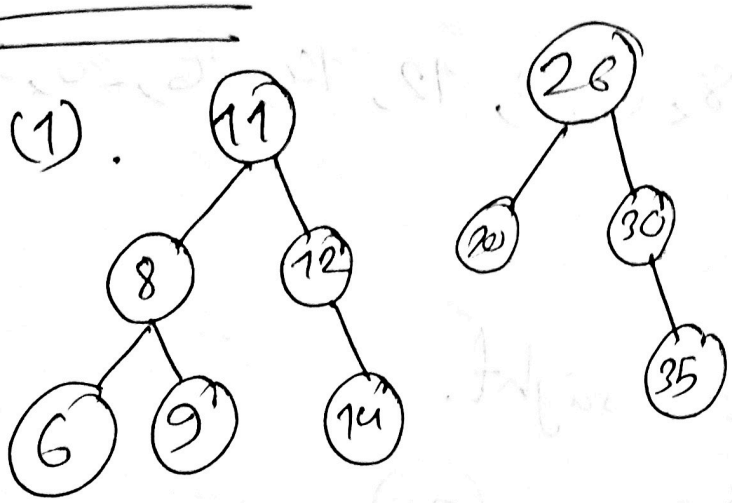


(iii) 6 8 9 11 12 14 15 20 26 30 35.

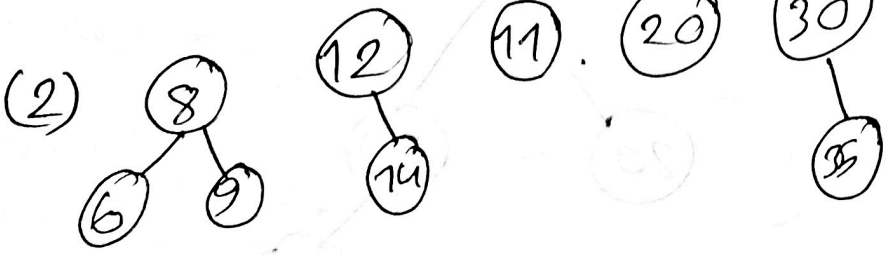
Inorder : 6, 8, 9, 11, 12, 14, 15, 20, 26, 30, 35.

postorder: left, Right, root.

(1).



(2)



(3) 6 9 8 14 12 11 20 35 30 20 15.

∴ postorder: 6, 9, 8, 14, 12, 11, 20, 35, 30, 20, 15.

(b). The binary search tree: