

Name :- Anket. A. Uppal

Roll No : 72

Subject : IS Lab

Loop

LOA

Remark

Sign

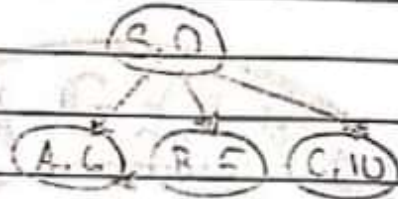
Q. 1.

1.1

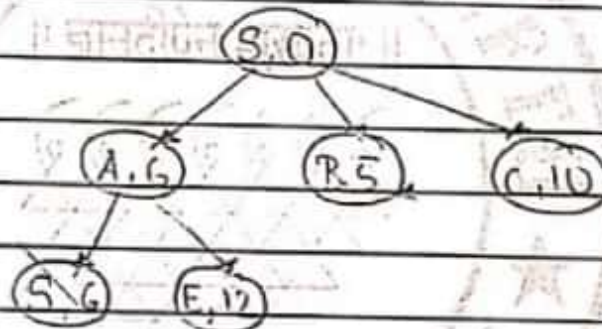
Step 0:



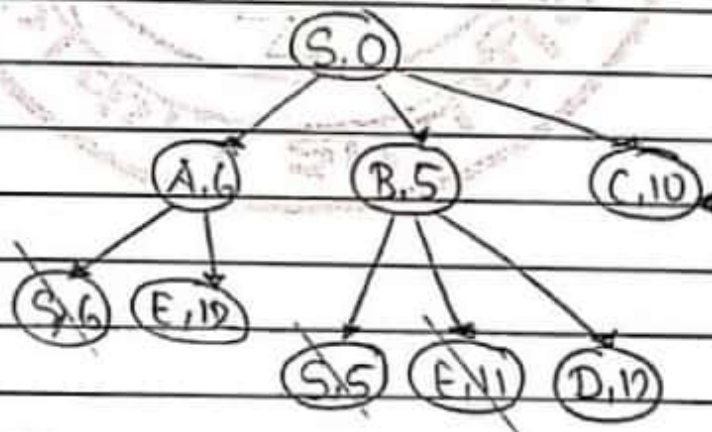
Step 1:



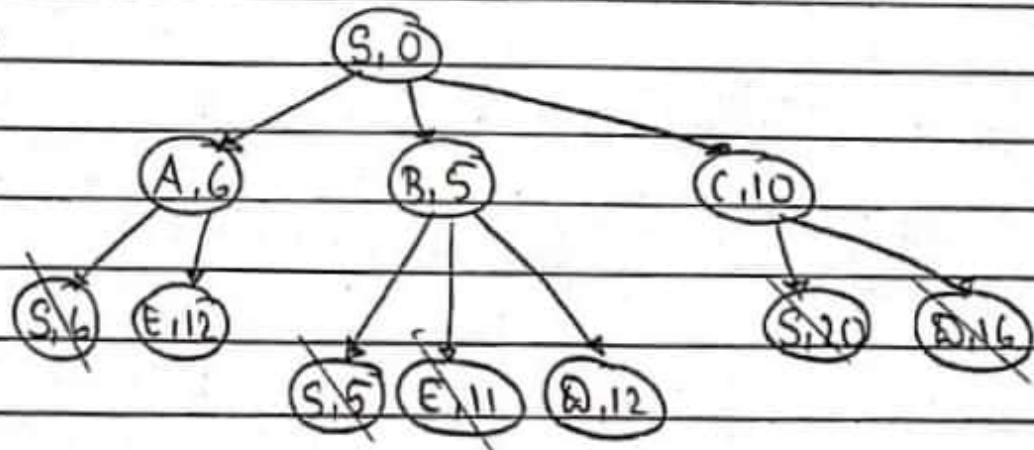
Step 2:



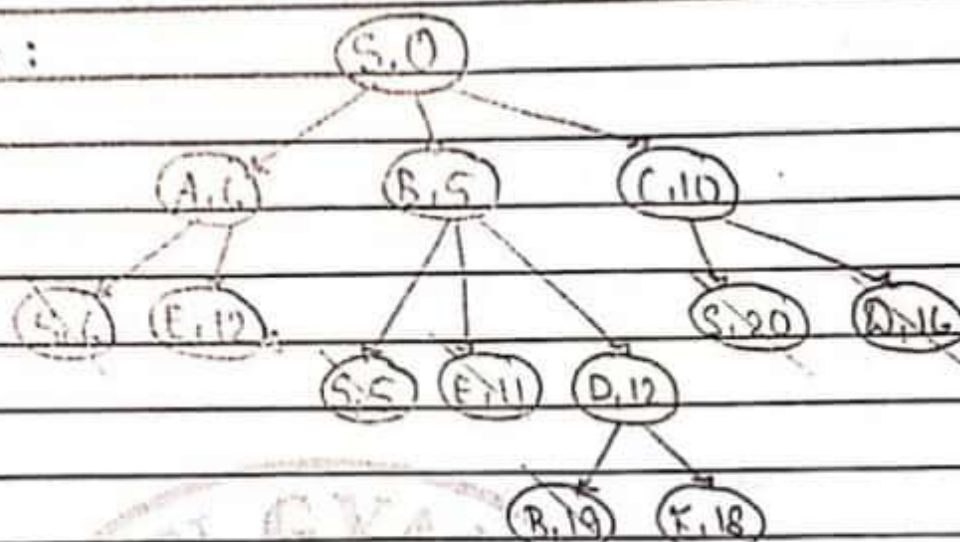
Step 3:



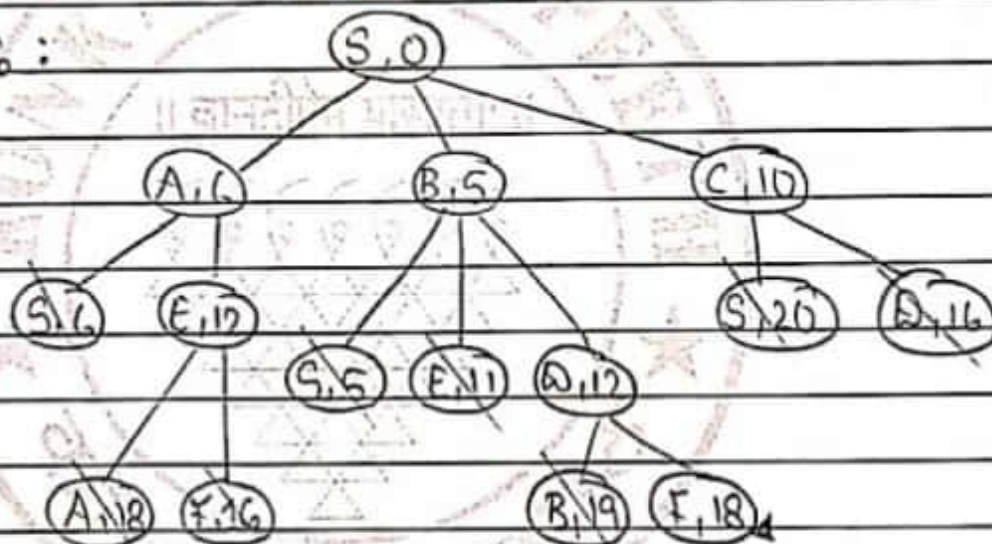
Step 4:



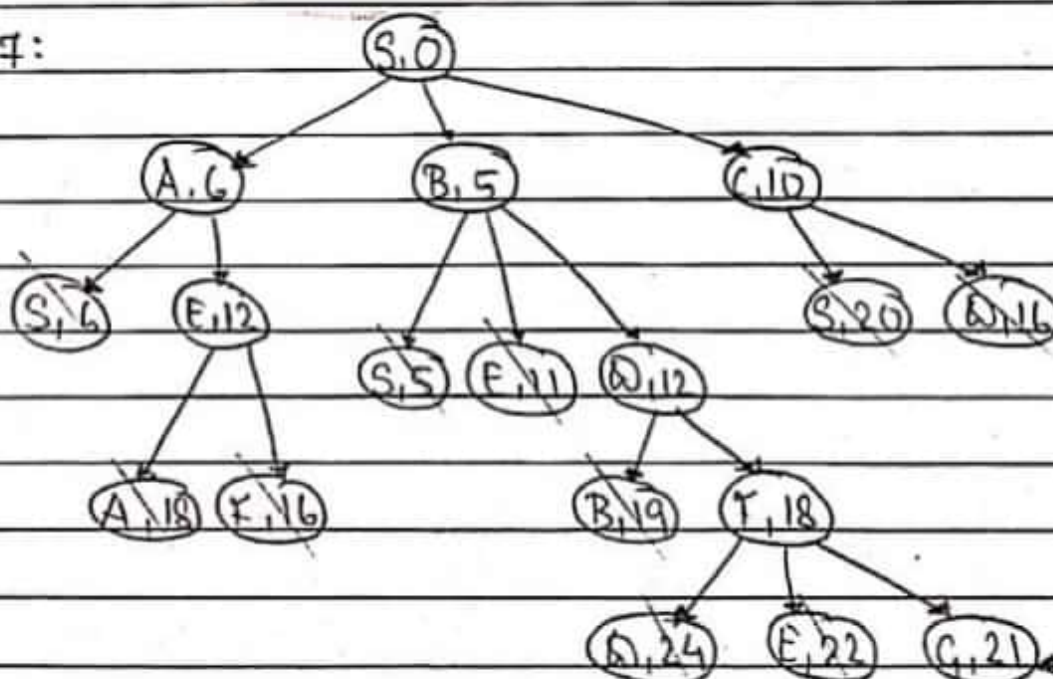
Step 5 :



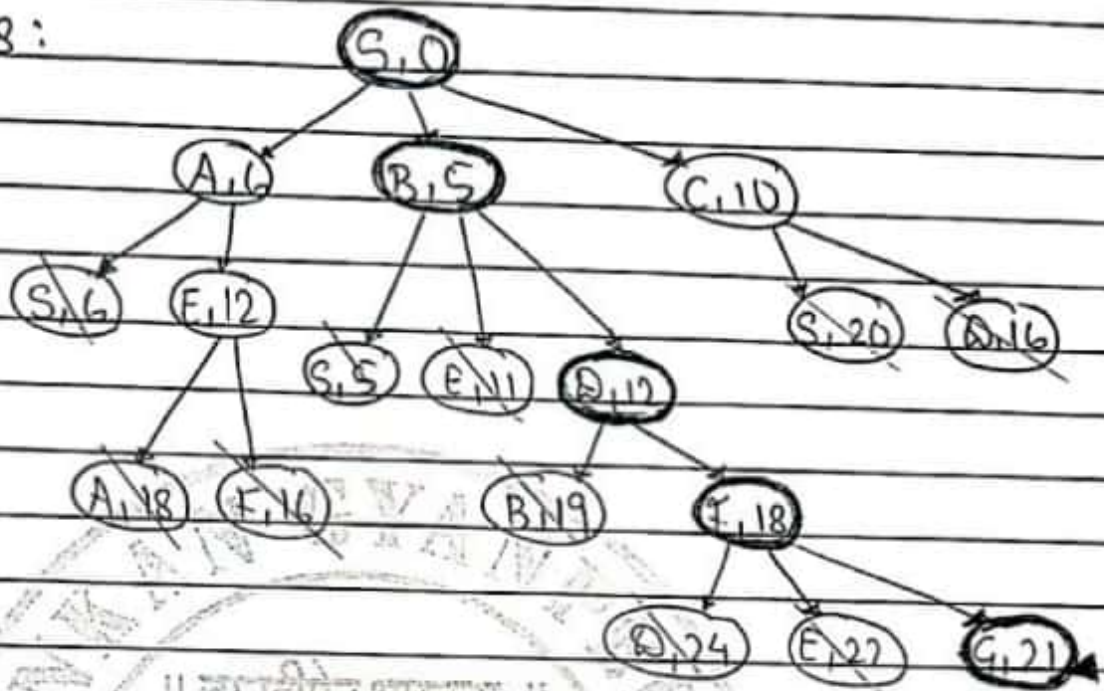
Step 6 :



Step 7 :



Step 8:



1.4

Initializal? : compute f score for S & put it in the openlist.

$$f\text{-score } S : f(S) = h(S) = 17$$

(S,17)

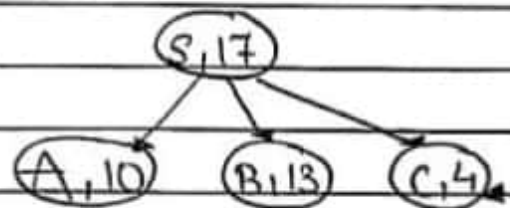
Step 1:

f - score of successors

$$f(A) = h(A) = 10$$

$$f(B) = h(B) = 13$$

$$f(C) = h(C) = 4$$

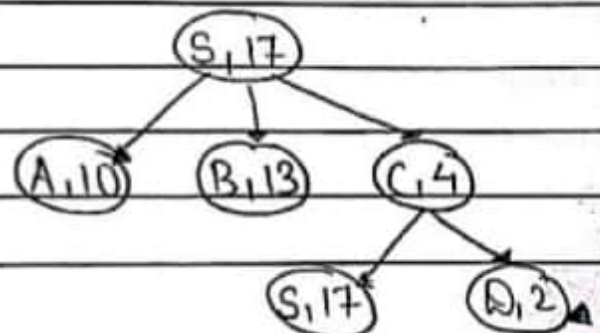


Step 2:

f - score of successors

$$f(S) = h(S) = 17$$

$$f(D) = h(D) = 2$$



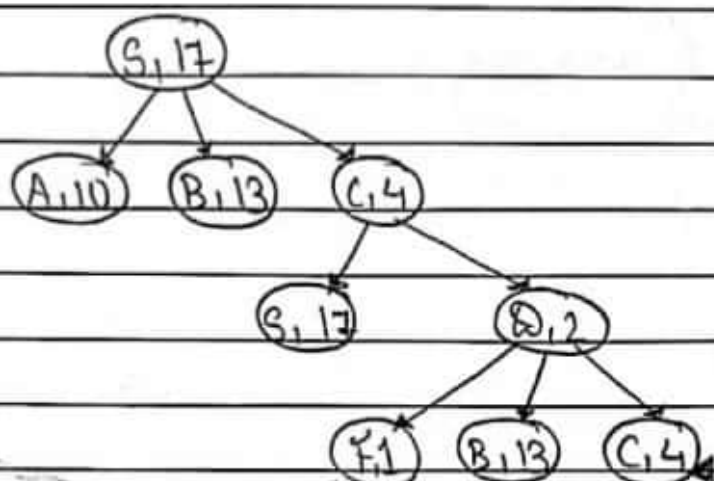
Step 3:

F - score of Successor

$$f(A) = h(A) = 4$$

$$f(B) = h(B) = 13$$

$$f(F) = h(F) = 1$$



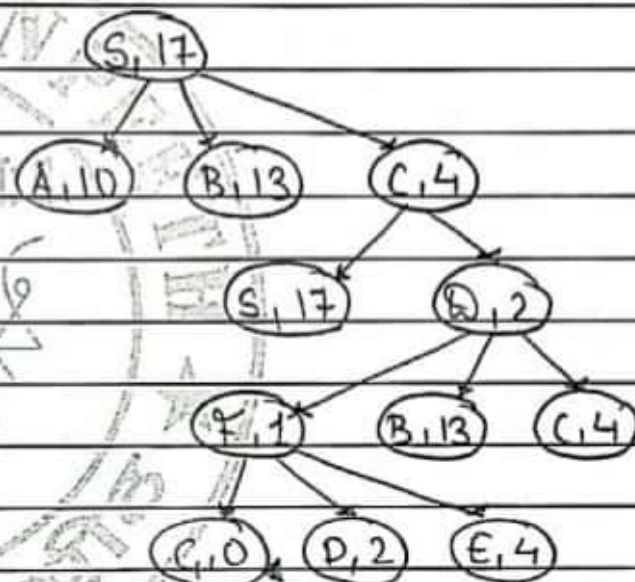
Step 4:

F - score of Successor

$$f(D) = h(D) = 2$$

$$f(E) = h(E) = 4$$

$$f(G) = h(G) = 0$$

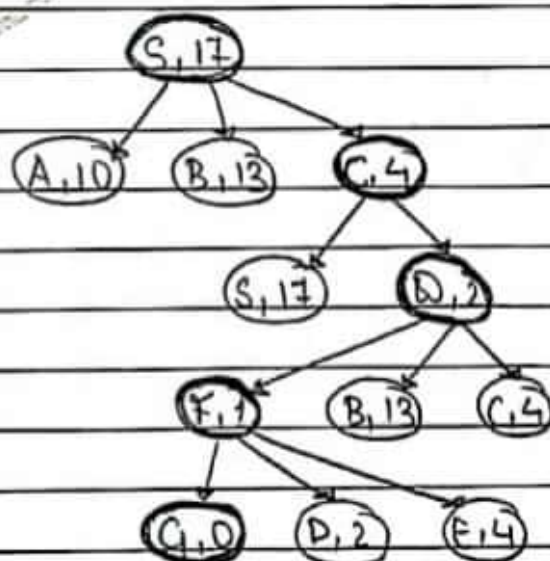


Step 5:

Solution is -

$S \rightarrow C \rightarrow D \rightarrow F \rightarrow G$ with

$$\text{Solution cost} : 10 + 6 + 6 + 3 = 25$$



2.	2)
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In our case, we can reach the final configuration in at last 4 moves : Up, Up, LEFT, LEFT
Since all moves are equally costly, we compute $g(n)$ as

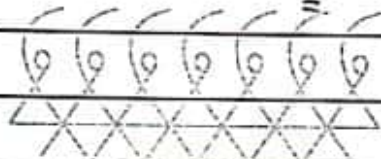
$$g(5) = 4$$

8	7	6
2	1	5
-	3	4

$$\begin{aligned} & \{ \{8, 7, 6\} \{2, 1, 5\} \{-3, 4\} \} \rightarrow \{ \{8, 7, 6\} \{2, 1, 5\}, \{3, -, 4\} \} \rightarrow \\ & \{ \{8, 7, 6\} \{2, 1, 5\} \{3, 4, -\} \} \rightarrow \{ \{8, 7, 6\} \{2, 1, \bar{4}\}, \{3, 4, 5\} \} \rightarrow \\ & \{ \{8, 7, -\} \{2, 1, 5\} \{3, 4, 5\} \} \rightarrow \{ \{8, -, 7\} \{2, 1, 6\} \{3, 4, 5\} \} \rightarrow \\ & \{ \{-, 8, 7\}, \{2, 1, 6\}, \{3, 4, 5\} \} \end{aligned}$$
$$g(n) = C_0$$

5. path : No of actⁿ to reach the workshop
cost

\therefore Path cost = 8 directⁿ + 4 stairs = 12



c] 1

8	7	6
2	1	5
3	4	-

Initial config

left				up			
8	7	6		8	7	6	
2	1	5		2	1	-	
3	-	4		3	4	5	

left			up			right			up			left			down		
8	7	6	8	7	6	8	7	6	8	7	-	8	7	6	8	7	6
2	1	5	2	-	5	2	1	5	2	-	1	2	-	1	2	1	5
-	3	4	3	1	4	3	4	-	3	4	5	3	4	5	3	4	-

left				down		
8	-	7		8	7	6
2	1	6		2	1	-
3	4	5		3	4	5

left down right

Scanned with CamScanner