

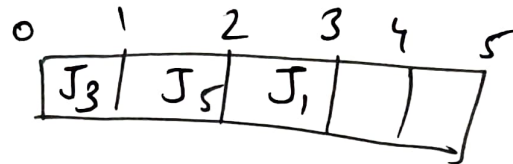
Praneesh.R.V

~~C.B.Sc. V4CYS23~~

C.B.Sc. V4CYS23036

①  $n=5$

profit  $\Rightarrow (10, 3, 33, 11, 40)$   
 deadlines  $\Rightarrow (3, 1, 1, 2, 2)$



$$\text{total profit} = 33 + 40 + 10 = 83$$

② ④

$A_1 : 10 \times 30$

$A_2 : 30 \times 5$

$A_3 : 5 \times 60$

$A_4 : 60 \times 10$

	1	2	3	4
1	0	1500	4500	5000
2		0	9000	4500
3			0	3000
4				0

	1	2	3	4
1	0	1	2	2
2	0	0	2	2
3	0	0	0	3
4	0	0	0	0

$$C[1,2] \Rightarrow K=1 [C[1,1] + C[2,4] + d_1 \times d_2]$$

$$= [0 + 0 + 10 \times 30 \times 5]$$

$$= 1500$$

$$C[2,3] \Rightarrow K=2 [C[2,2] + C[3,3] + d_1 \times d_2 \times d_3]$$

$$= 0 + 0 + 30 \times 5 \times 60$$

$$= 9000$$

$$C[3,4] \Rightarrow k=3 [C[3,3] + C[4,4] + d_2 \times d_3 \times d_4] \\ = 0 + 0 + 5 \times 60 \times 10 = 3000$$

$$C[1,3] \Rightarrow k=1 \begin{cases} C[1,1] + C[2,3] + d_0 \times d_1 \times d_3 = 4500 \\ k=2 \end{cases} \underbrace{C[1,2] + C[3,3]}_{1800} + d_0 \times d_2 \times d_3 = 4500$$

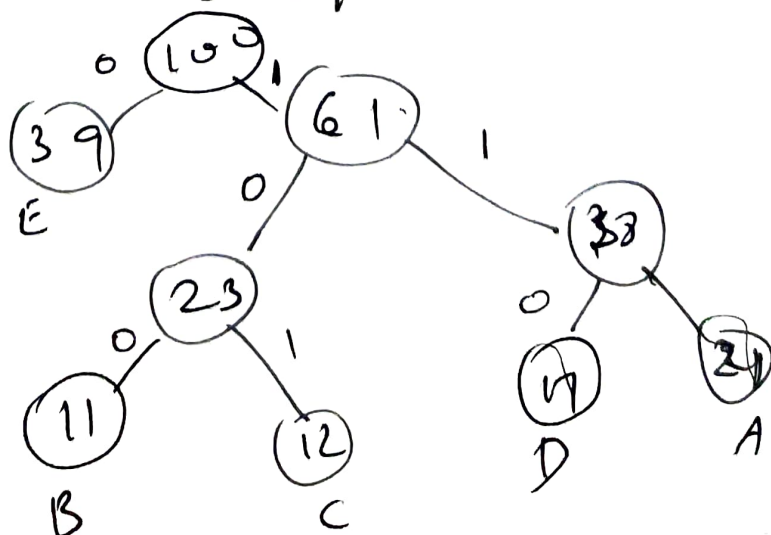
$$C[2,4] \Rightarrow k=2 \begin{cases} C[2,2] + C[3,4] + d_1 \times d_2 \times d_4 = 4500 \\ k=3 \end{cases} \begin{cases} C[2,3] + C[4,4] + d_1 \times d_3 \times d_4 = 27000 \end{cases}$$

$$C[1,4] = k=1 \begin{cases} C[1,1] + C[2,4] + d_0 \times d_1 \times d_4 = 7500 \\ k=2 \end{cases} \begin{cases} C[1,2] + C[3,4] + d_0 \times d_2 \times d_4 \\ k=3 \end{cases} \begin{cases} C[1,3] + C[4,4] + d_0 \times d_3 \times d_4 = 5000 \end{cases} \\ 10500$$

optimal parenthesization  $\Rightarrow (A_1, A_2) (A_3, A_4)$

⑤ . A: 21  
B: 11  
C: 12  
D: 17  
E: 39

code	cost
B: 11	00
C: 12	01
D: 17	110
A: 21	111
E: 39	0



⑥  $X = ACDBE$   
 $Y = ABCDE$

		A	B	C	D	E
A	0	1	1	1	1	1
C	0	1	1	2	2	2
D	0	1	1	2	3	3
B	0	1	2	2	3	3
E	0	1	2	2	3	3

LCS = ACDE

a) ACDE

b) Length of LCS = 4

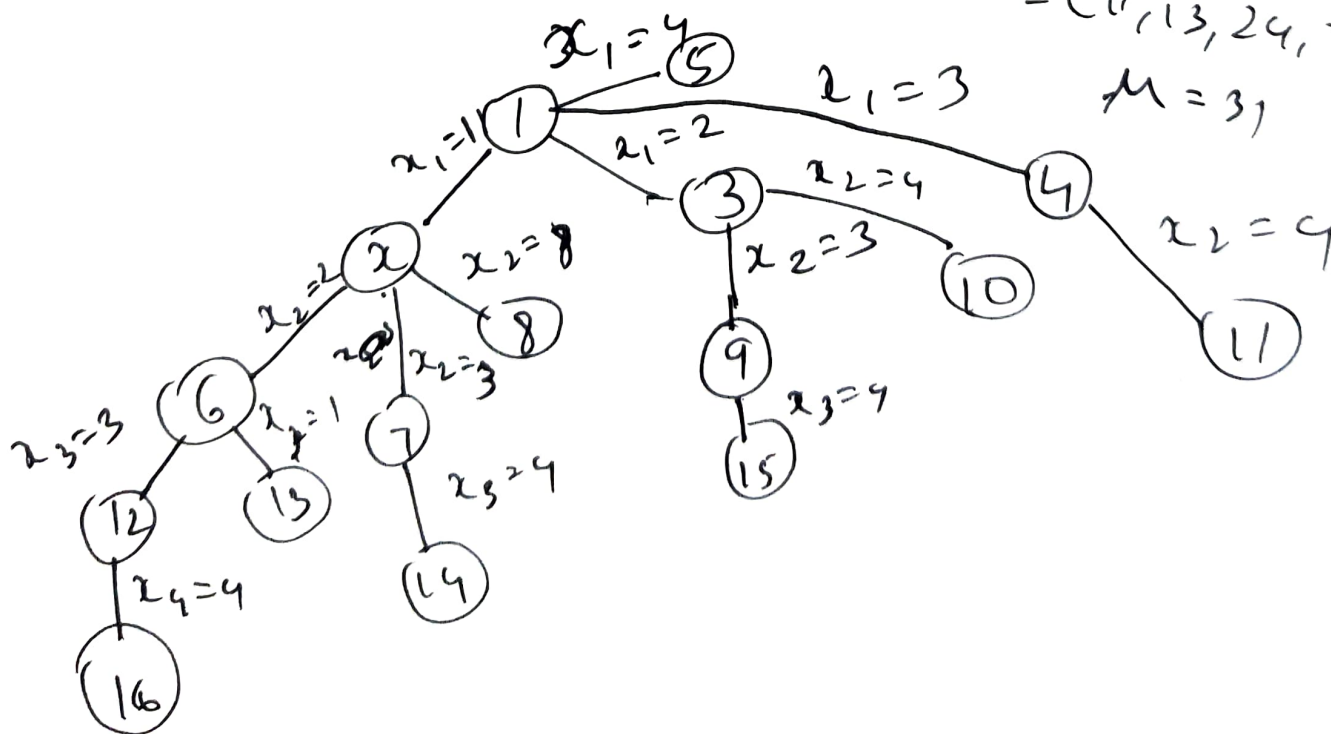
②  $w_1 + w_2 + w_4 = 31$

$w_3 + w_4 = 31$

$n = 4$   
 $(w_1, w_2, w_3, w_4)$

$= (11, 13, 24, 7)$

$M = 31$



③

		0	15	18	19	33	34	35
	0	0	0	0	0	0	0	0
18	1	0	0	59	0	0	0	0
19	2	0	0	59	59	59	59	59
18	3	0	60	60	60	114	114	114

max profit obtained is 114



other way  
0, 15, 19