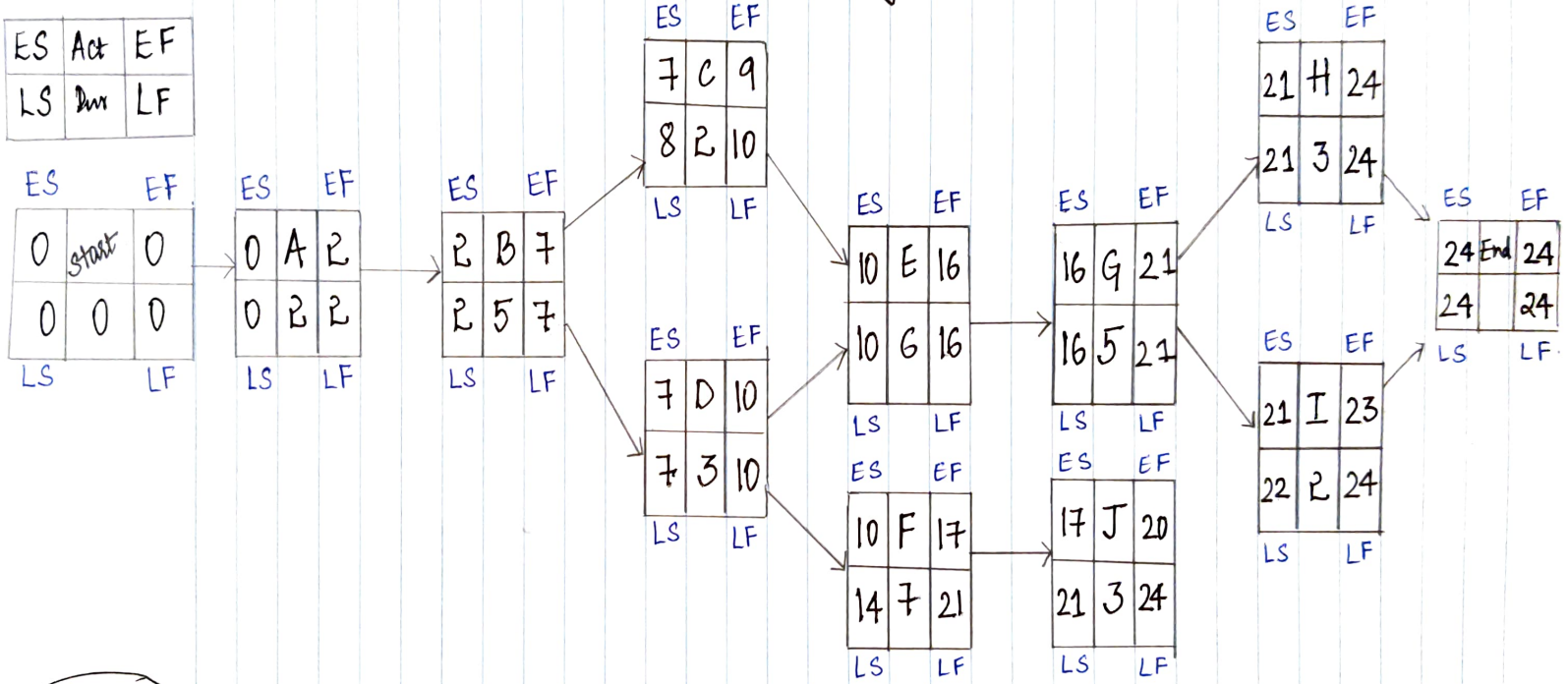
Question 1

NETWORK DIAGRAM USING PDM TECHNIQUE

Forward & Backward Pass

Project Duration = 24



Slack Time :-

$ST = LS - ES$.

1) $A = 0 - 0 = 0$
2) $B = 2 - 2 = 0$
3) $C = 8 - 7 = 1$
4) $D = 7 - 7 = 0$
5) $E = 10 - 10 = 0$.
6) $F = 14 - 10 = 4$
7) $G = 16 - 16 = 0$
8) $H = 21 - 21 = 0$
9) $I = 22 - 21 = 1$
10) $J = 21 - 17 = 4$.

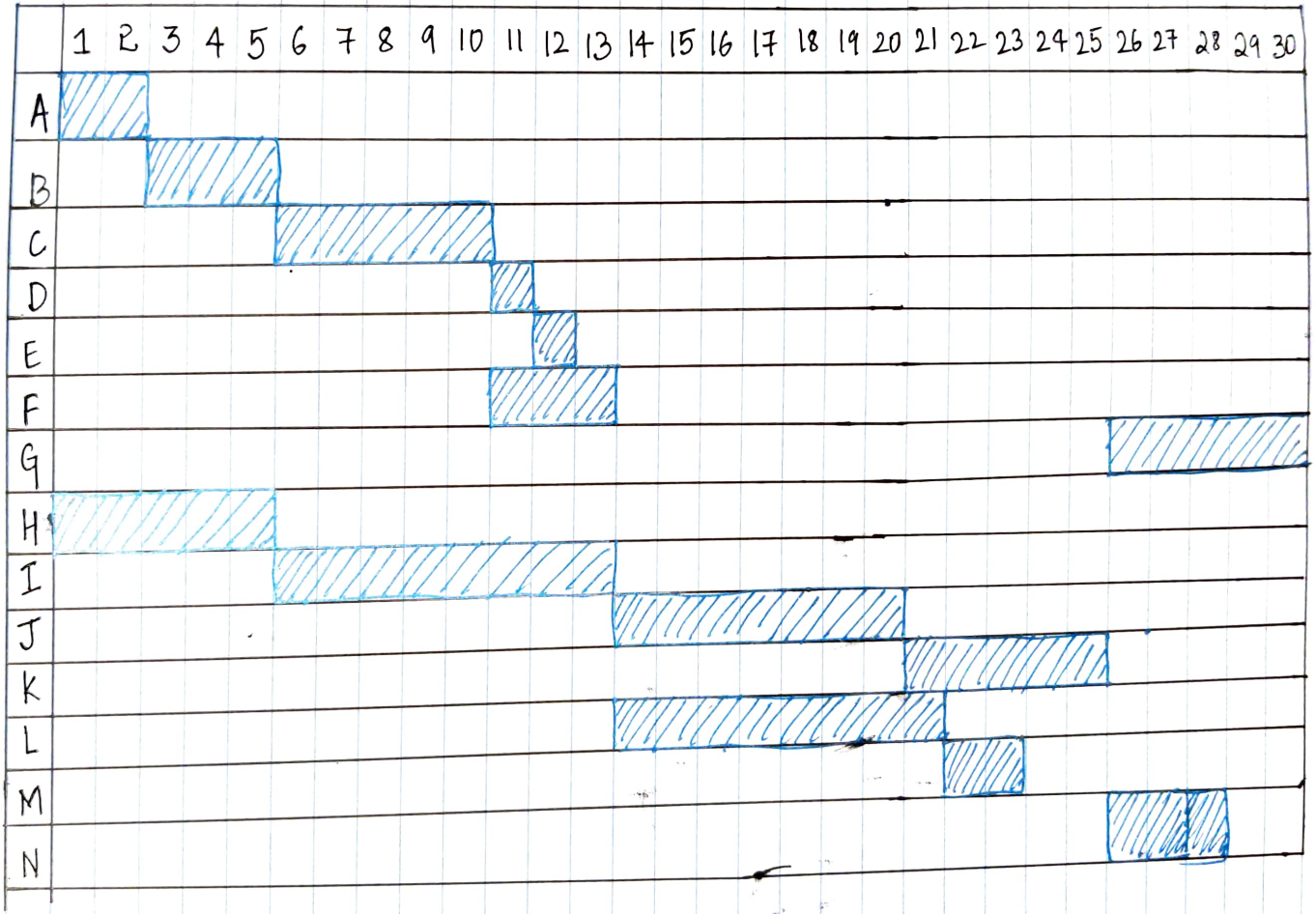
⇒ The earliest completion of the project would be $A \rightarrow B \rightarrow D \rightarrow E \rightarrow G \rightarrow H$. for having a project Duration of 24.

⇒ The critical path in the project would be

$A \rightarrow B \rightarrow D \rightarrow E \rightarrow G \rightarrow H$.

Question 2 1]

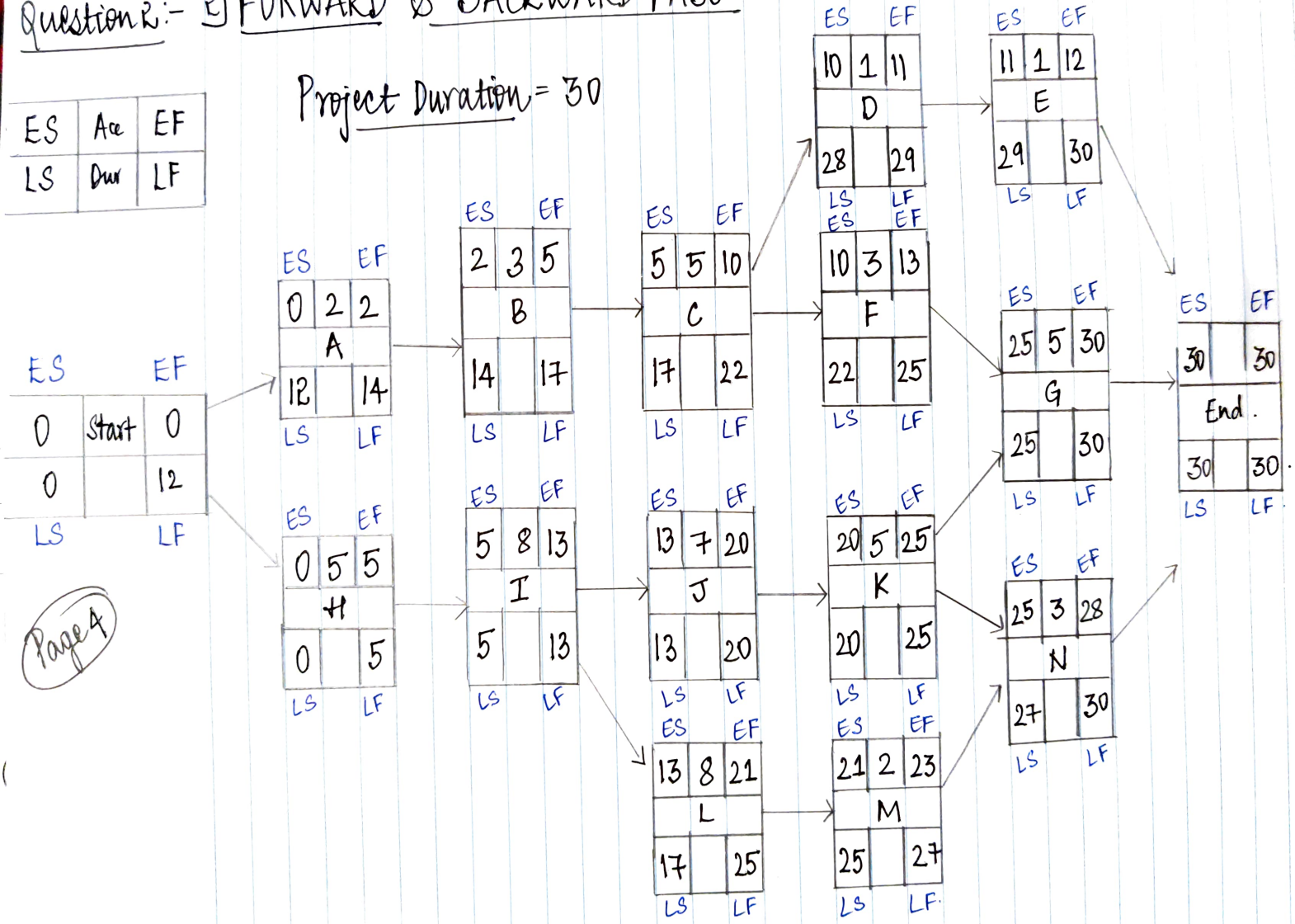
GANTT CHART



Question 2:- 2] FORWARD & BACKWARD PASS :-

Project Duration = 30

ES	Act	EF
LS	Dur	LF



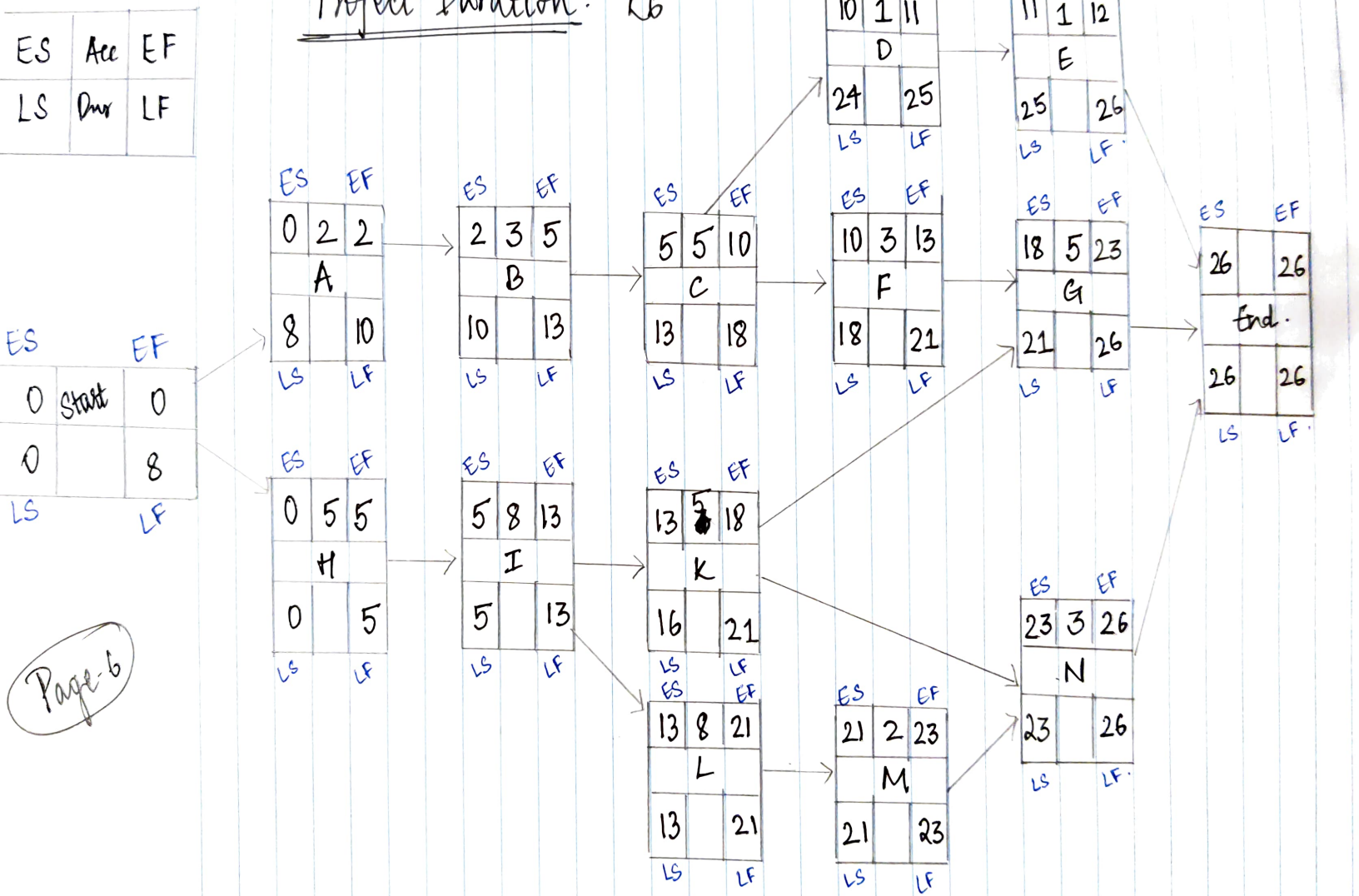
3] Slack Time :- $S_T = L_S - E_S$

1) A = 12 - 0 = 12
2) B = 14 - 2 = 12
3) C = 17 - 5 = 12.
4) D = 28 - 11 = 18
5) E = 29 - 11 = 18
6) F = 22 - 10 = 12
7) G = 25 - 25 = 0
8) H = 0 - 0 = 0
9) I = 5 - 5 = 0
10) J = 13 - 13 = 0
11) K = 20 - 20 = 0
12) L = 17 - 13 = 4
13) M = 25 - 21 = 4
14) N = 27 - 25 = 2

⇒ The critical path is H → I → J → K → G.

4] Remove J and link I to K.

Project Duration :- 26



4] Slack Time :- $ST = LS - ES$.

1) A = 8 - 0 = 8
2) B = 10 - 2 = 8
3) C = 13 - 5 = 8
4) D = 24 - 10 = 14
5) E = 25 - 11 = 14
6) F = 18 - 10 = 8
7) G = 21 - 18 = 3
8) H = 0 - 0 = 0
9) I = 5 - 5 = 0
10) K = 16 - 13 = 3
11) L = 13 - 13 = 0
12) M = 21 - 21 = 0
13) N = 23 - 23 = 0.

⇒ The Critical path H → I → L → M → N