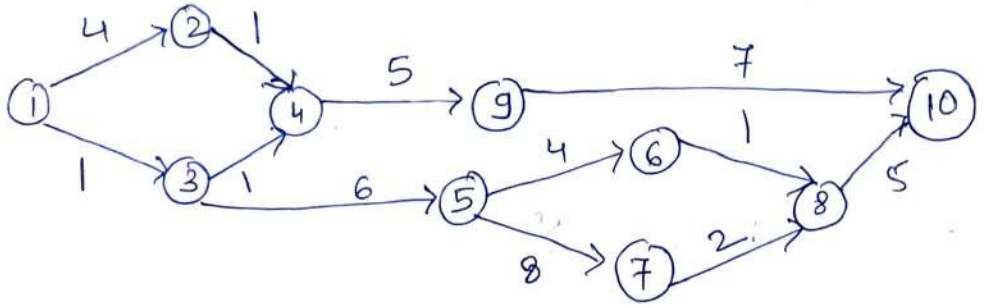
project schedule has the following characteristics:

ity	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-10	9-10
ne (days)	4	1	1	1	6	5	4	8	1	2	5	7

1. Construct Network diagram.
2. Compute the earliest event time and latest event time
3. Determine the critical path and total project duration.
4. Compute total and free float for each activity.

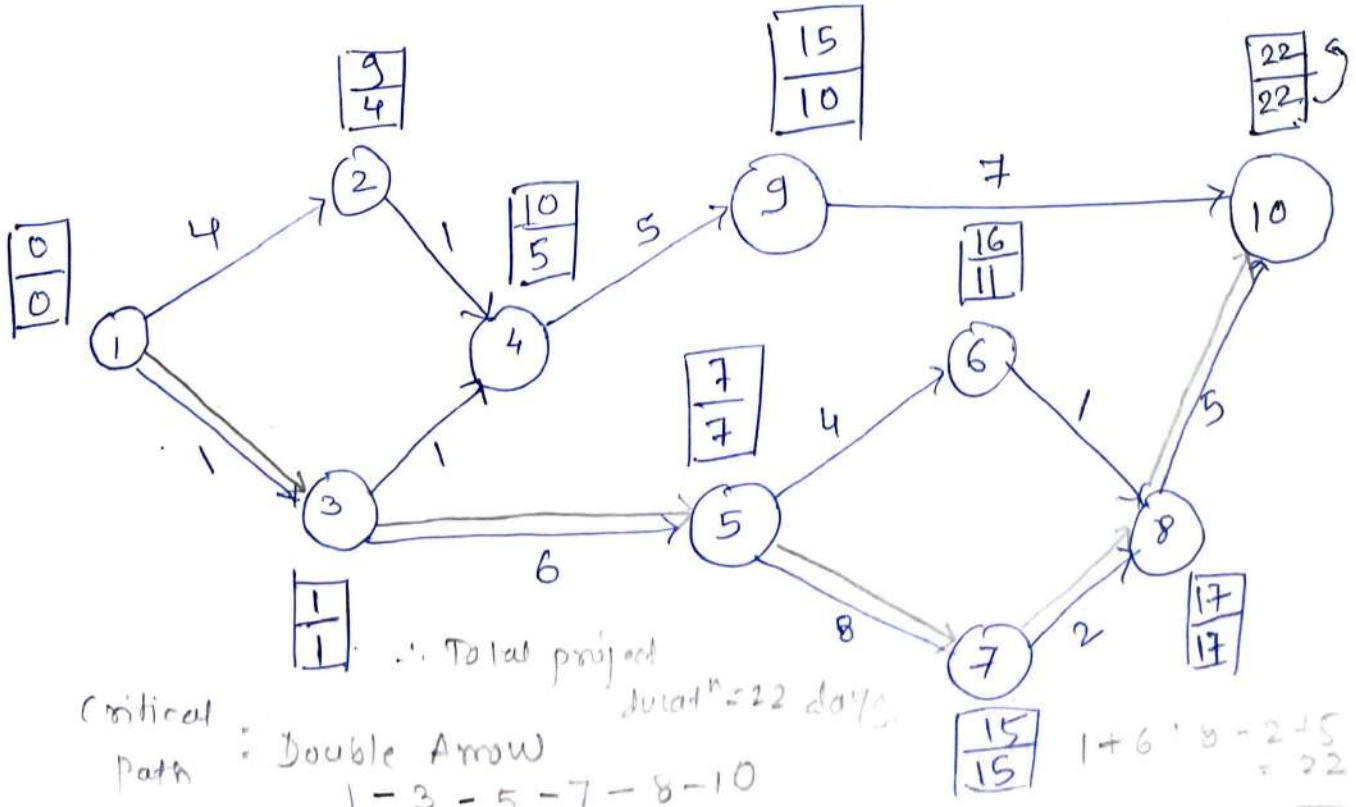
→

1) Network diagram



2) Latest time
Earliest time

→ 1st calculate earliest time
→ then calculate latest time



(20) following table gives the information.

3) Critical path = 1 - 3 - 5 - 7 - 8 - 10

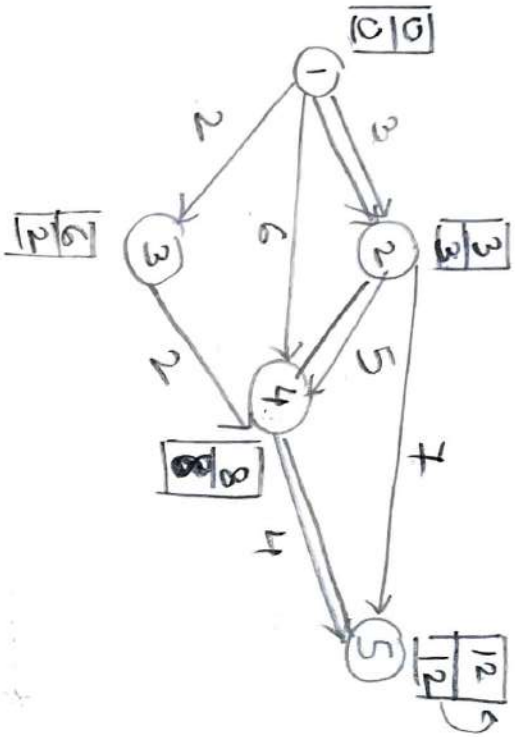
Total project duration = 1 + 6 + 8 + 2 + 5 = 22 days ∴ (6)

Activity	t_{ij} Time (days)	Earliest ① Start	Earliest ③ Finish	Latest ④ Start	Latest ② Finish	⑤ Total Float LS - ES	⑧ Free Float Ej - ES - tij	E j ⑦
1 - 2 ES LF	4	0	0+4 = 4	9-4 = 5	9	5 - 0 = 5	4-0-4 = 0	4 1-2
1 - 3	1	0	0+1 = 1	1-1 = 0	1	0	1-0-1 = 0	1 1-3
2 - 4	1	4	5	9	10	5	0	5 2-4
3 - 4	1	1	2	9	10	8	3	5
3 - 5	6	1	7	1	7	0	0	7
4 - 9	5	5	10	10	15	5	0	10
5 - 6	4	7	11	12	16	5	0	11
5 - 7	8	7	15	7	15	0	0	15
6 - 8	1	11	12	16	17	5	5	17
7 - 8	2	15	17	15	17	0	0	17
8 - 10	5	17	22	17	22	0	0	22
9 - 10	7	10	17	15	22	5	5	22

Activity	Time	Early		Latest		Total Float LS - ES
		Start	Finish	start	Finish	
1 - 2	3	0	3	0	3	0
1 - 3	2	0	2	4	6	4
1 - 4	6	0	6	2	8	2
2 - 4	5	3	8	3	8	0
2 - 5	7	3	10	5	12	2
3 - 4	2	2	4	6	8	4
4 - 5	4	8	12	8	12	0

Critical path : 1 - 2 - 4 - 5

Total project duration : 3 + 5 + 4 = 12 days

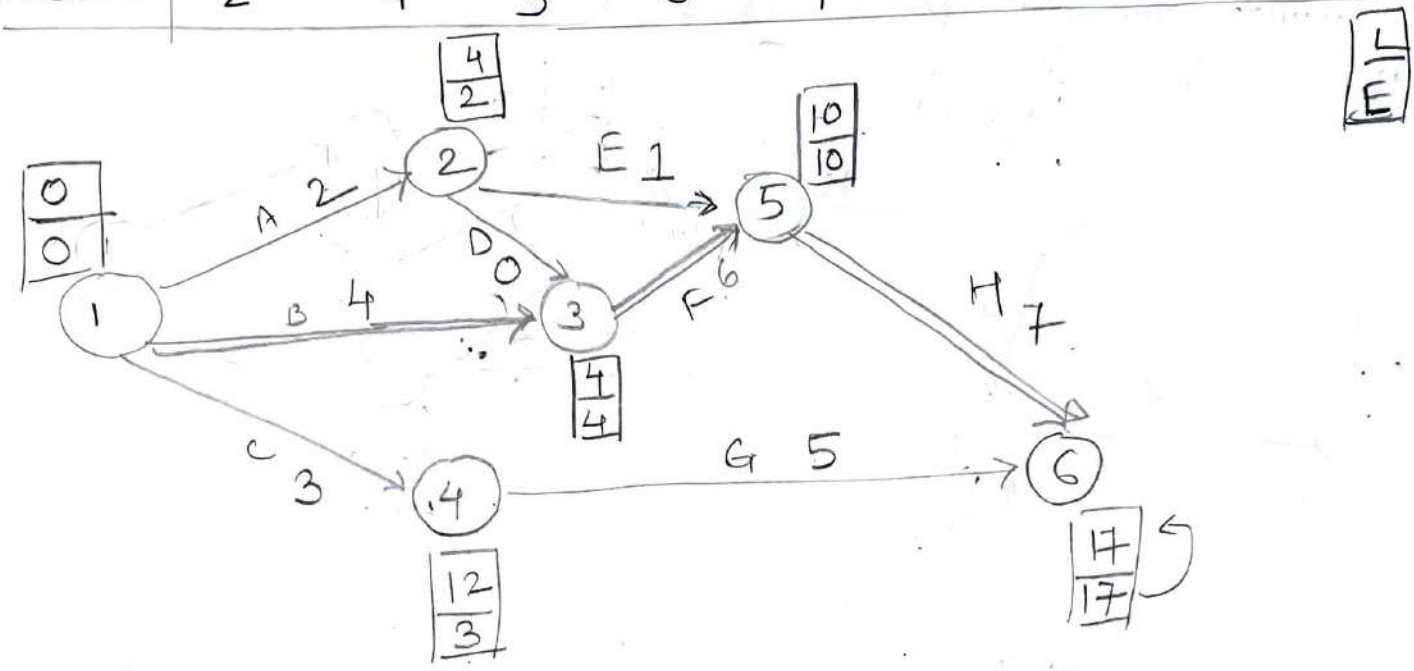


8. Activity

Activity	Time (days)
1 - 2	3
1 - 3	2
1 - 4	6
2 - 4	5
2 - 5	7
3 - 4	2
4 - 5	4

Q. The following data pertains to a small project. You are to draw the network diagram, find project duration and mark critical path.

Event	A	B	C	D	E	F	G	H
Activity	1-2	1-3	1-4	2-3	2-5	3-5	4-6	5-6
Duration	2	4	3	0	1	6	5	7



Activity	Time	Early start	Early finish	Latest start	Latest finish	Total Float
1-2	2	0	2	2	4	2
1-3	4	0	4	0	4	0
1-4	3	0	3	9	12	9
2-3	0	2	2	4	4	2
2-5	1	2	3	9	10	7
3-5	6	4	10	4	10	0
4-6	5	3	8	12	17	9
5-6	7	10	17	10	17	0

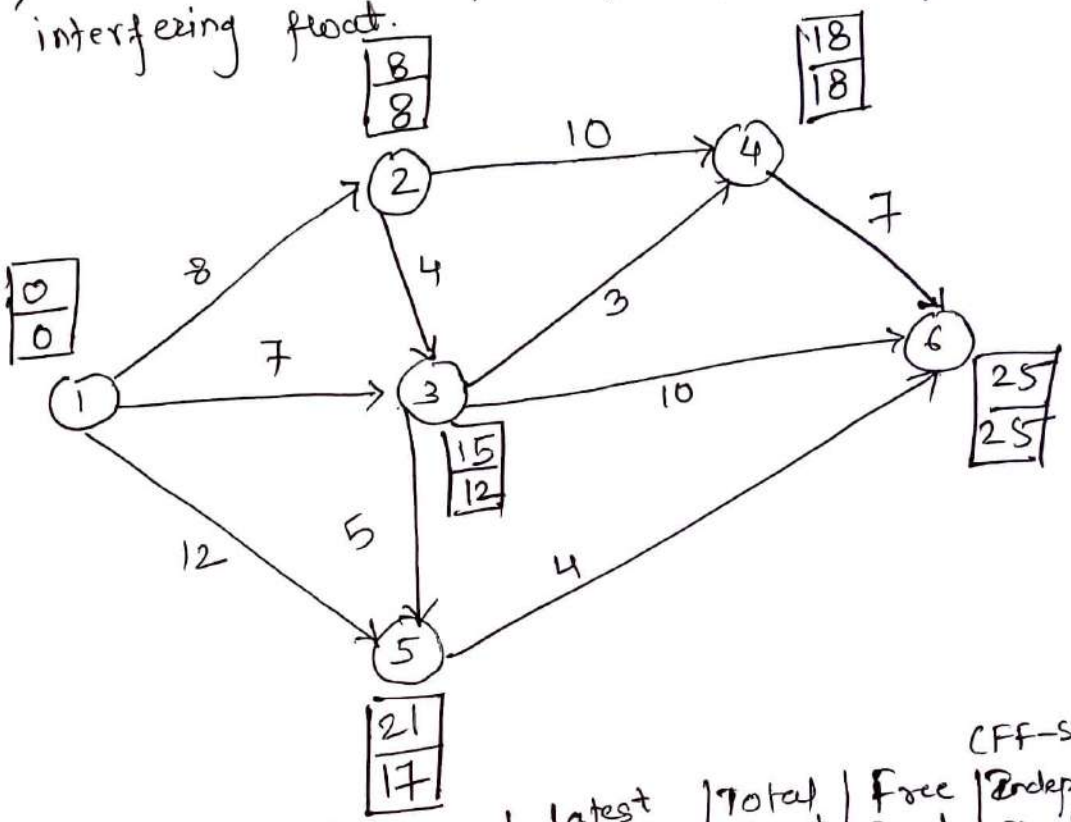
Critical path : 1 - 3 - 5 - 6

Total project duration : 4 + 6 + 7 = 17 days.

Consider a Project whose activities are given below:

Activity	1-2	1-3	1-5	2-3	2-4	3-4	3-5	3-6	4-6	5-6
Duration (in weeks)	8	7	12	4	10	3	5	10	7	4

i) Draw the network
ii) Calculate Earliest start, earliest finish, latest start & latest finish.
iii) Determine the critical path of the project
iv) Calculate the total float, free float, independent float & interfering float.



Activity	Time	Early start	Early finish	Latest start	Latest finish	Total float	Free float (EF-ES-Tij)	Independent float (CFF-ST)	Interfering float (TF-FF)	Ej
1-2	8	0	8	0	8	0	0	0-0=0	0	8
1-3	7	0	7	8	15	8	5	5-0=5	3	12
1-5	12	0	12	9	21	9	5	5	4	17
2-3	4	8	12	11	15	3	0	0	3	12
2-4	10	8	18	8	18	0	0	0	0	18
3-4	3	12	15	15	18	3	3	0	0	18
3-5	5	12	17	16	21	4	0	-3	4	17
3-6	10	12	22	15	25	3	3	0	0	25
4-6	7	18	25	18	25	0	0	0	0	25
5-6	4	17	21	21	25	4	4	0	0	25