

## ENGR 301 - Assignment 2

The next page shows the Activity on the Node network diagram for the project having the following set of activities:

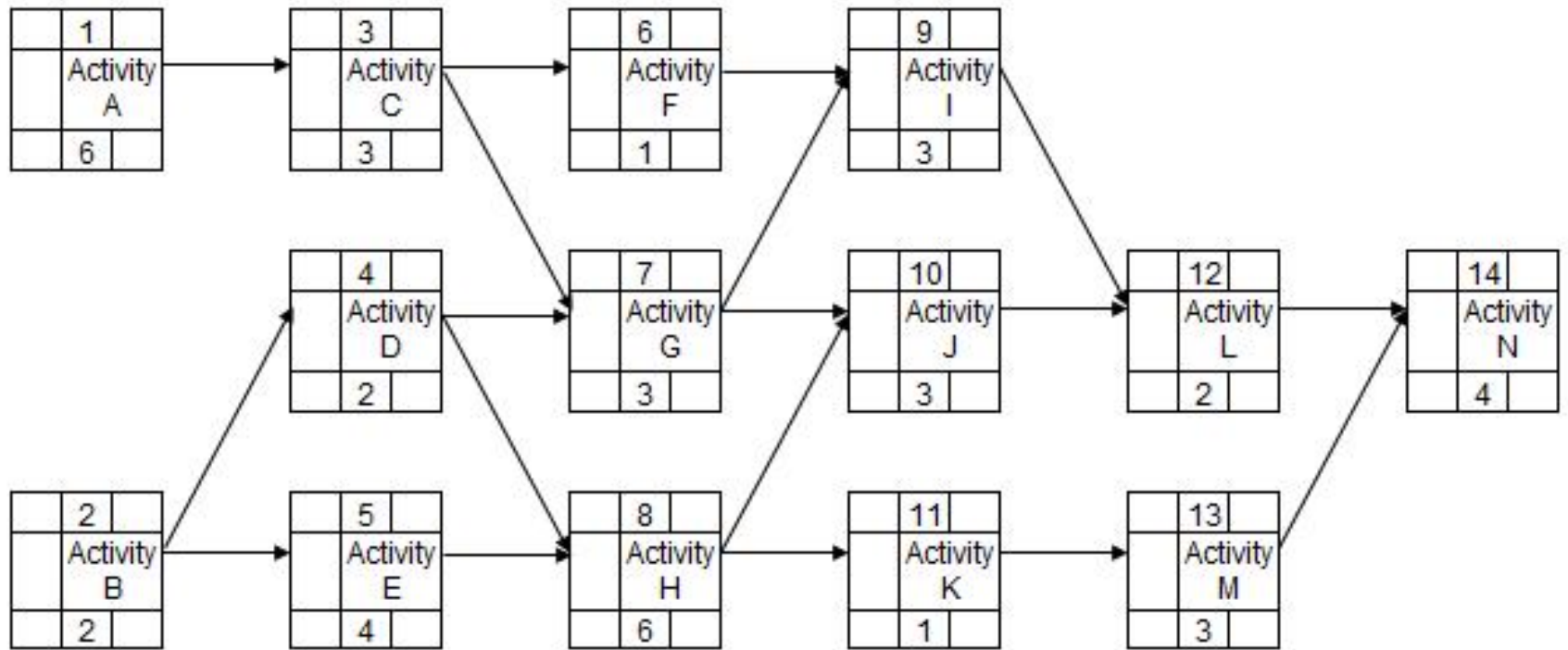
Activity			
Number	Description	Duration	Predecessors
1	Activity A	6	--
2	Activity B	2	--
3	Activity C	3	A
4	Activity D	2	B
5	Activity E	4	B
6	Activity F	1	C
7	Activity G	3	C,D
8	Activity H	6	D,E
9	Activity I	3	F,G
10	Activity J	3	G,H
11	Activity K	1	H
12	Activity L	2	I,J
13	Activity M	3	K
14	Activity N	4	L,M

Note that a dummy node *START*, with duration 0, is introduced to allow for a common start of activities A and B.

Find ES, EF, LS, LF and F for all the activities in the diagram and answer the following questions:

- |                                              |     |    |    |    |    |        |
|----------------------------------------------|-----|----|----|----|----|--------|
| 2-1. What is EF of activity G?               | (5  | 7  | 9  | 11 | 13 | other) |
| 2-2. What is ES of activity H?               | (2  | 4  | 6  | 8  | 10 | other) |
| 2-3. What is the total project duration?     | (17 | 19 | 21 | 31 | 43 | other) |
| 2-4. What is LF of activity J?               | (12 | 13 | 14 | 15 | 30 | other) |
| 2-5. What is LS of activity D?               | (5  | 4  | 3  | 2  | 1  | other) |
| 2-6. What is Float of activity J?            | (0  | 1  | 2  | 3  | 4  | other) |
| 2-7. What is Float of activity F?            | (0  | 1  | 2  | 3  | 4  | other) |
| 2-8. What is ES of activity N?               | (15 | 17 | 19 | 25 | 36 | other) |
| 2-9. How many critical activities are there? | (6  | 7  | 9  | 10 | 12 | other) |
| 2-10. How many critical paths are there?     | (0  | 1  | 2  | 3  | 4  | other) |

All questions are of equal value, 1 mark each.



Legend:

ES	Activity #	EF
F	Activity description	
LS	D	LF

ES: early start  
 EF: early finish  
 LS: late start  
 LF: late finish  
 D: duration  
 F: float (or slack)