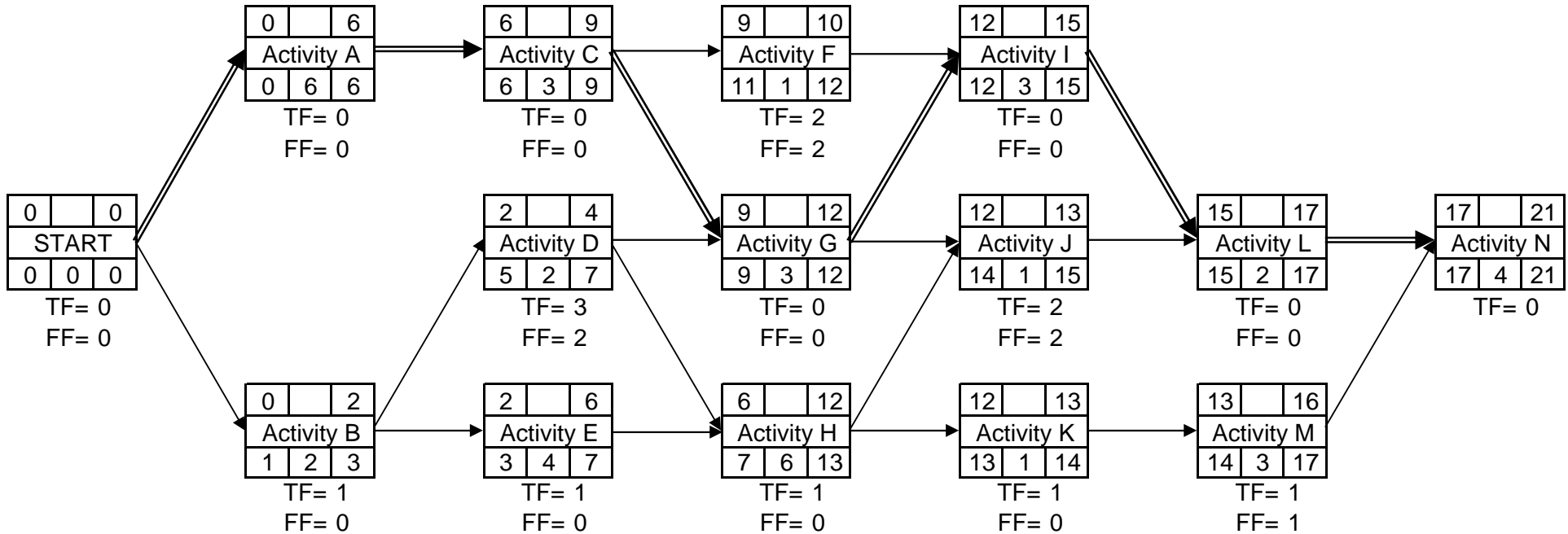
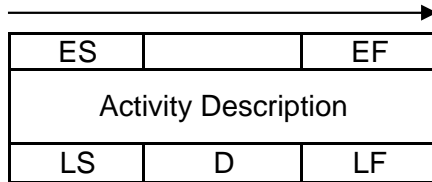


## Precedence Diagram (AON - Activity On Node)



### Legend:

Forward pass:  $EF = ES + D$



Backward pass:  $LS = LF - D$

ES: earliest start

EF: earliest finish

LS: latest start

LF: latest finish

D: duration

TF: Total Float (or Total Slack)

FF: Free Float (or Free Slack)

Critical path 1: (Start) A C F I L N

### Answers to assignment 1:

$$ES_A = 0; EF_A = ES_A + D_A$$

$$ES_B = EF_A; EF_B = ES_B + D_B; \text{ repeat in case a node has one predecessor}$$

$$ES_G = \max(EF_C, EF_D); \text{ repeat in case a node has 2 or more predecessor}$$

$$TF = LF - EF = LS - ES$$

$$FF_i = ES_j - EF_i$$

$$\text{e.g. } FF_C = \min(ES_F, ES_G) - EF_C$$

1 EF of G = 12

2 ES of H = 6

3 project duration = 21

4 LF of J = 15

5 LS of D = 5

6 TF of J = 2

7 TF of F = 2

8 FF of E = 0

9 FF of D = 2

10 # of critical paths = 1