

$$\begin{aligned}\text{Total Float} &= 50 - 10 - 10 \\ &= \underline{30 \text{ days}}\end{aligned}$$

b) **Free float**

This is the amount of time an activity can be delayed without affecting the commencement of a subsequent activity at its earliest start time, but may affect float of a previous activity.

$$\begin{aligned}\text{Free Float} &= \text{Earliest Head time} - \text{Earliest Tail time} - \text{Activity Duration} \\ \text{Free Float} &= 40 - 10 - 10 \\ &= \underline{20 \text{ days}}\end{aligned}$$

c) **Independent float**

This is the amount of time an activity can be delayed when all preceding activities are completed as late as possible and all succeeding activities completed as early as possible. Independent float therefore does not affect the float of either preceding or subsequent activities.

$$\begin{aligned}\text{Independent float} &= \text{Earliest Head time} - \text{Latest Tail time} - \text{Activity Duration} \\ \text{Independent float} &= 40 - 20 - 10 \\ &= \underline{10 \text{ days}}\end{aligned}$$

Notes:

- For examination purposes the most important type of float is Total Float because it is involved with the overall project duration. On occasions the term 'Float' is used without qualification. In such cases assume that Total Float is required.
- The total float can be calculated separately for each activity but it is often useful to find the total float over chains of non-critical activities between critical events. For example in Figure 23/4 the only non-critical chain of activities is C, E for which the following calculation can be made:

Non-critical chain	Time required	Time available	Total float over chain
C, E	$3 + 1 = \underline{4 \text{ days}}$	$7 - 1 = \underline{6 \text{ days}}$	$= 2 \text{ days}$

If some of the 'chain float' is used up on one of the activities in a chain it reduces the leeway available to other activities in the chain.

- Alternative terms for Earliest Head Time and Latest Headtime are Earliest Finishing Time (EFT) and Latest Finishing Time (LFT), respectively.

Example of float calculations

The example used in the preceding chapter is reproduced below with the addition of activity durations. It is required to find the critical path and all floats.