

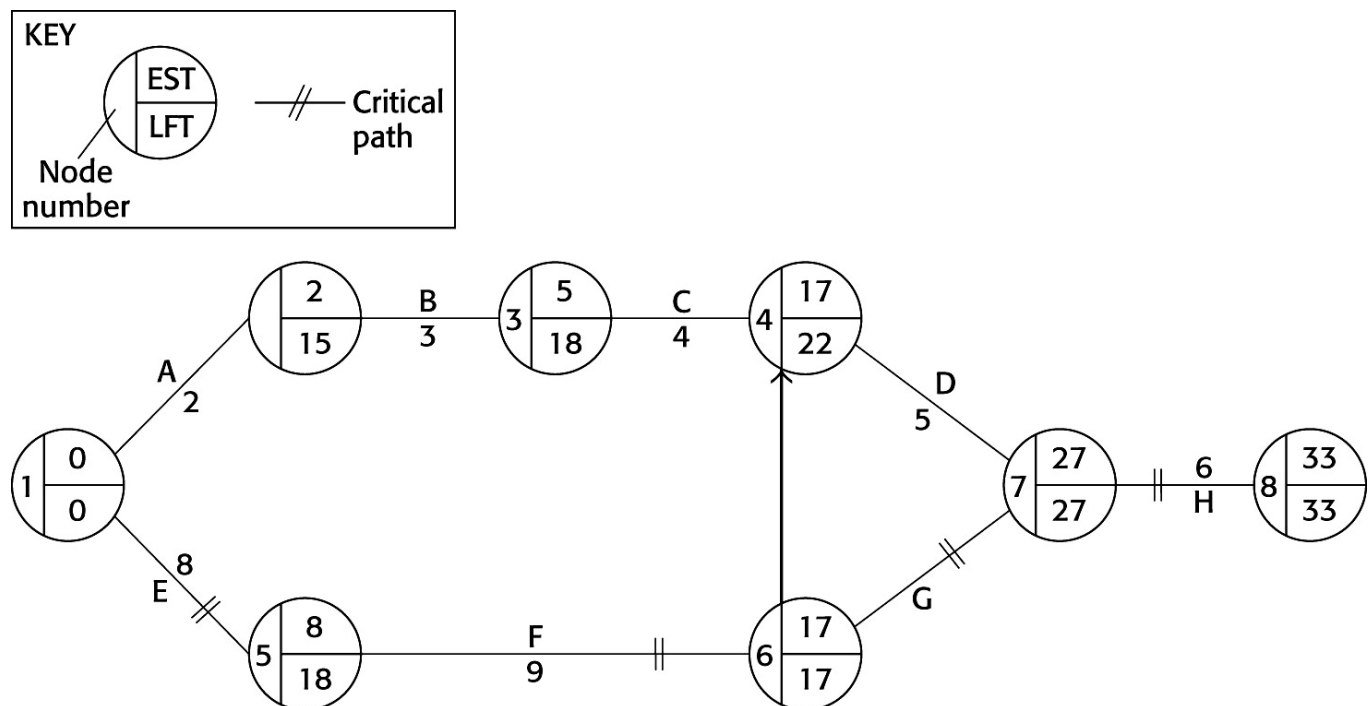
Chapter 37: Worksheet mark scheme (24 marks)

- 1 a** Draw a network diagram for project X with EST and LFT clearly shown on each node and the critical path clearly labelled. **(10)**

Order of tasks for project X

Activity	Preceding activities	Duration (in days)
A	–	2
B	A	3
C	A, B	4
D	A, B, C, E, F	5
E	–	8
F	E	9
G	E, F	10
H	D, G	6

Critical path analysis diagram for project X



10 marks:

A correct CPA with the critical path, ESTs and LFTs clearly marked and a key included. The direction of the dependency of the dummy activity is correctly marked in the direction $F \rightarrow C$.

8–9 marks:

Up to two minor errors, but the dummy activity is recognised. No more than 8 marks should be awarded if the dummy activity is represented by activities converging on a single node.

6–7 marks:

Up to three errors. Award a maximum of 6 marks if no key is included.

4–5 marks:

A CPA with no key and/or four or more errors.

2–3 marks:

The candidate has the basic idea of drawing a CPA but displays little understanding of the principles involved in calculating EST or LFT.

1 mark:

CPA attempted.

- b** Calculate the total float and free float for all non-critical activities. (**Hint:** show all working and formulae used.) **(10)**

Activity	EST	LFT	Duration (days)	Total float (days) LFT – duration – EST	Free float (days) EST (next activity) – duration – EST (this activity)
A	0	15	2	13	0
B	2	18	3	13	0
C	5	22	4	13	8
D	17 (EST next 27)	27	5	5	5

Award 1 mark for correct total float formula, 1 mark for correct free float formula and 1 mark each for correct calculation of floats (up to a maximum of 8 marks – no marks possible if formulae used are incorrect).

- 2** What does total float tell managers? **(2)**

This is the amount of time an activity can be delayed without delaying the whole project.



3 What does free float tell managers?

(2)

This is the amount of time an activity can be delayed without delaying the start of the following activities.