Notes on calculation of EST (termed the *forward pass*).

a) The EST of a head event is obtained by adding onto the EST of the tail event th linking activity duration starting from Event 0, time 0 and working forward throug the network.

b) Where two or more routes arrive at an event the *longest* route time must be take e.g. Activity F depends on completion of D and E. E is completed by day 5 and D not complete until day 7 ∴ F cannot start before day 7.

c) The EST in the finish event No. 5 is the project duration and is the shortest time which the whole project can be completed.

Latest start times (LST). To enable the critical path to be isolated, the LST for ea activity must be established. The LST is the latest possible time at which a preced activity can finish without increasing the project duration. Using the example above LSTs are as follows.
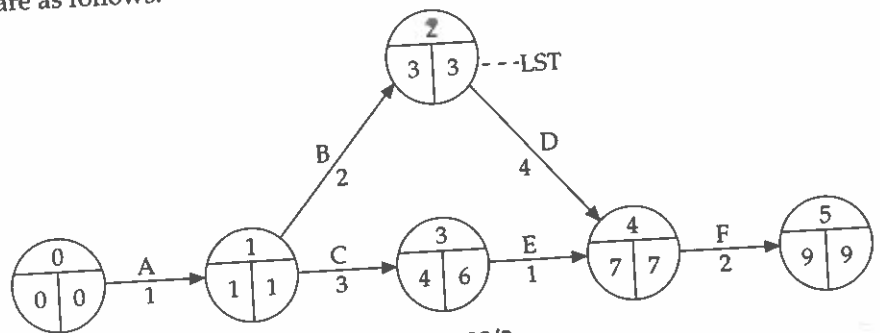

Figure 23/3

Notes on calculating LST (termed the *backward pass*).

a) Starting at the finish event No. 5, insert the LST (i.e. day 9) and work backw through the network deducting each activity duration from the previously calcu LST.

b) Where the tails of activities B and C join event No. 1, the LST for C is day 3 an LST for B is day 1. The lowest number is taken as the LST for Event No. 1 beca event No. 1 occurred at day 3 then activities B and D could not be completed b 7 as required and the project would be delayed.

Critical path

4. Examination of Figure 23/3 shows that one path through the network (A, B, D, EST's and LST's which are identical. This is the critical path which it should be n the chain of activities which has the longest duration. The critical path can be in on the network either by a different colour or by two small transverse lines acr arrows along the path thus: