2.

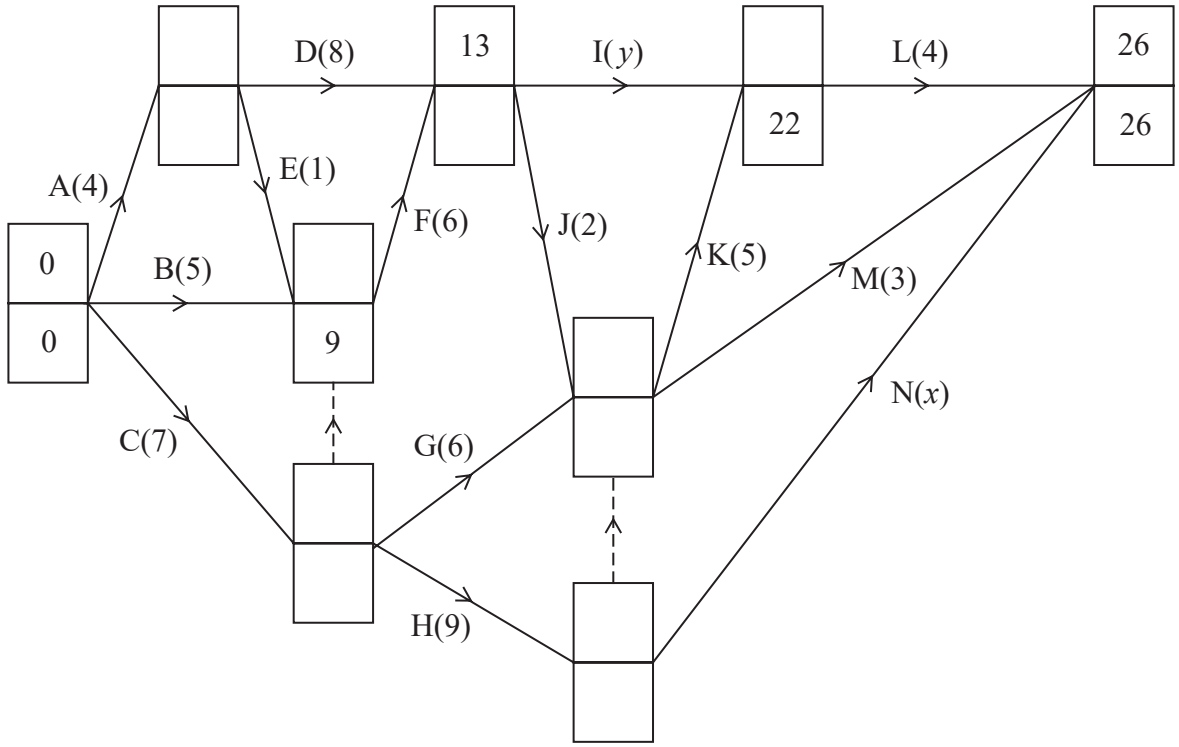


Figure 1

The network in Figure 1 shows the activities that need to be undertaken to complete a project. Each activity is represented by an arc and the duration of the activity, in days, is shown in brackets. The early event times and late event times are to be shown at each vertex and some have been completed.

Given that

- CHN is the critical path for the project
- the total float on activity B is twice the duration of the total float on activity I

(a) find the value of x and show that the value of y is 7

(2)

(b) Calculate the missing early event times and late event times and hence complete Diagram 1 in your answer book.

(3)

Each activity requires one worker, and the project must be completed in the shortest possible time.

(c) Draw a cascade chart for this project on Grid 1 in your answer book, and use it to determine the minimum number of workers needed to complete the project in the shortest possible time. You must make specific reference to time and activities.

(6)

(Total for Question 2 is 11 marks)