2.

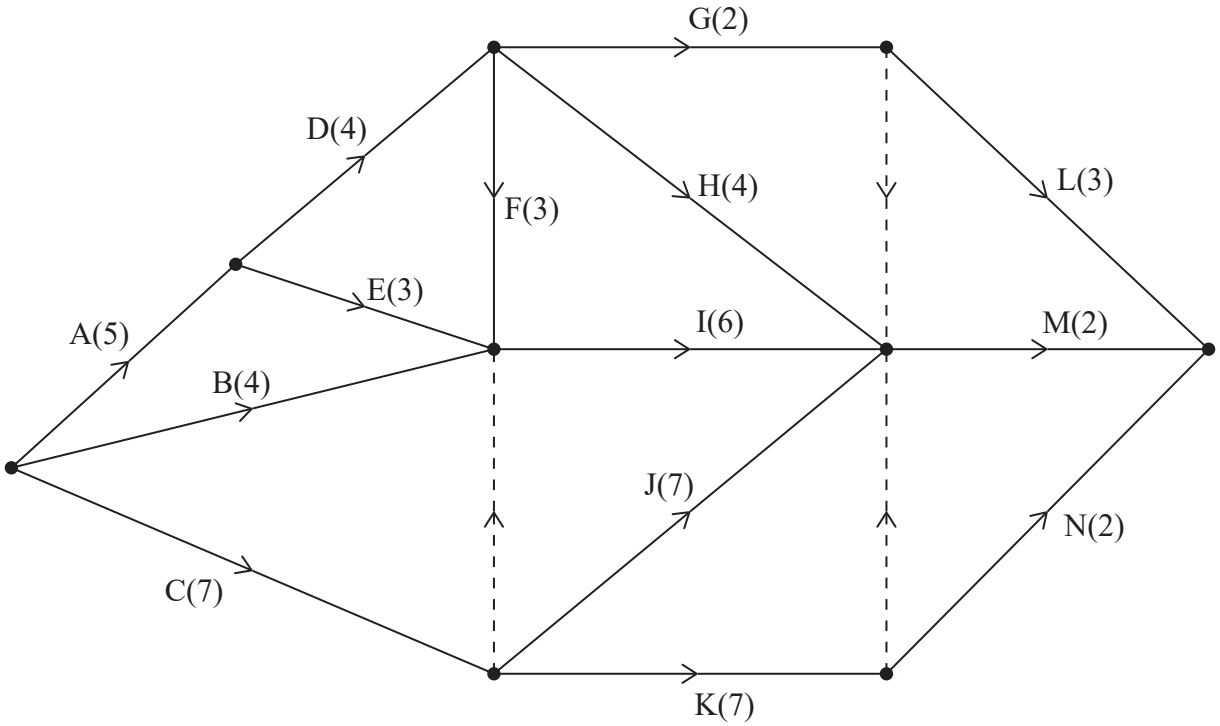


Figure 1

[*The sum of the durations of all the activities is* 59 *days*.]

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, in days, of the corresponding activity is shown in brackets. Each activity requires one worker. The project is to be completed in the shortest possible time.

(a) (i) Complete Diagram 1 in the answer book to show the early event times and the late event times.

(ii) State the minimum completion time of the project.

(5)

(b) Calculate a lower bound for the number of workers needed to complete the project in the minimum time. You must show your working.

(1)

(c) Schedule the activities using the minimum number of workers so that the project is completed in the minimum time.

(4)

(Total for Question 2 is 10 marks)