**2.**

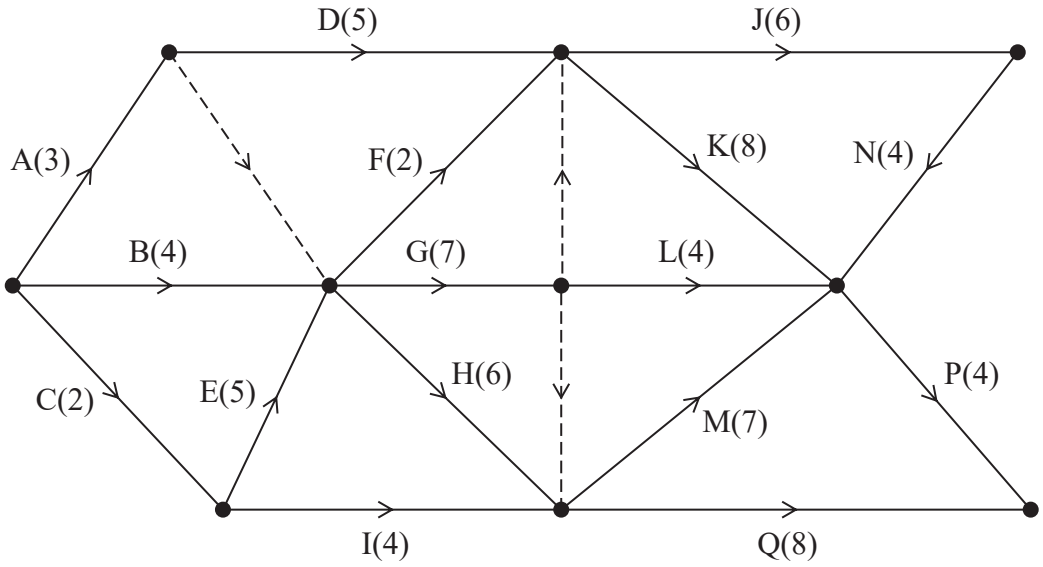



**Figure 1**

A project is modelled by the activity network shown in Figure 1. The activities are represented by the arcs. The number in brackets on each arc gives the time, in hours, to complete the corresponding activity. Each activity requires one worker. The project is to be completed in the shortest possible time.

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

**(4)**

(b) Draw a cascade chart for this project on Grid 1 in the answer book.

**(4)**

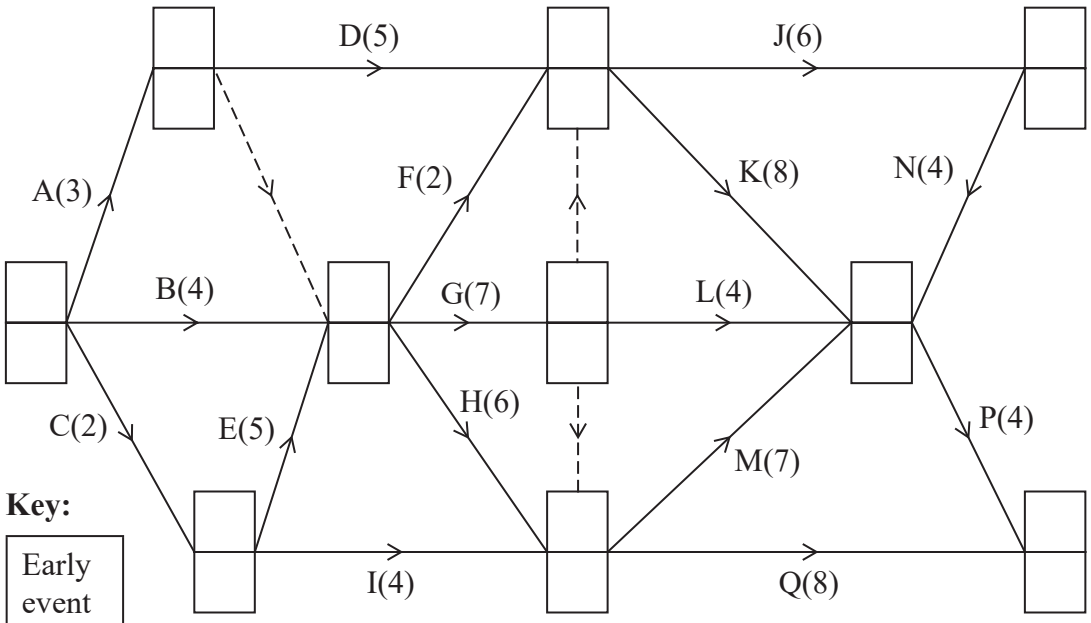
(c) Use your cascade chart to determine the minimum number of workers needed to complete the project in the shortest possible time. You must make specific reference to time and activities. (You do not need to provide a schedule of the activities.)

**(2)**

**(Total 10 marks)**

Leave blank

**2.**




**Key:**

| |
|---|
| Early event time |
| Late event time |

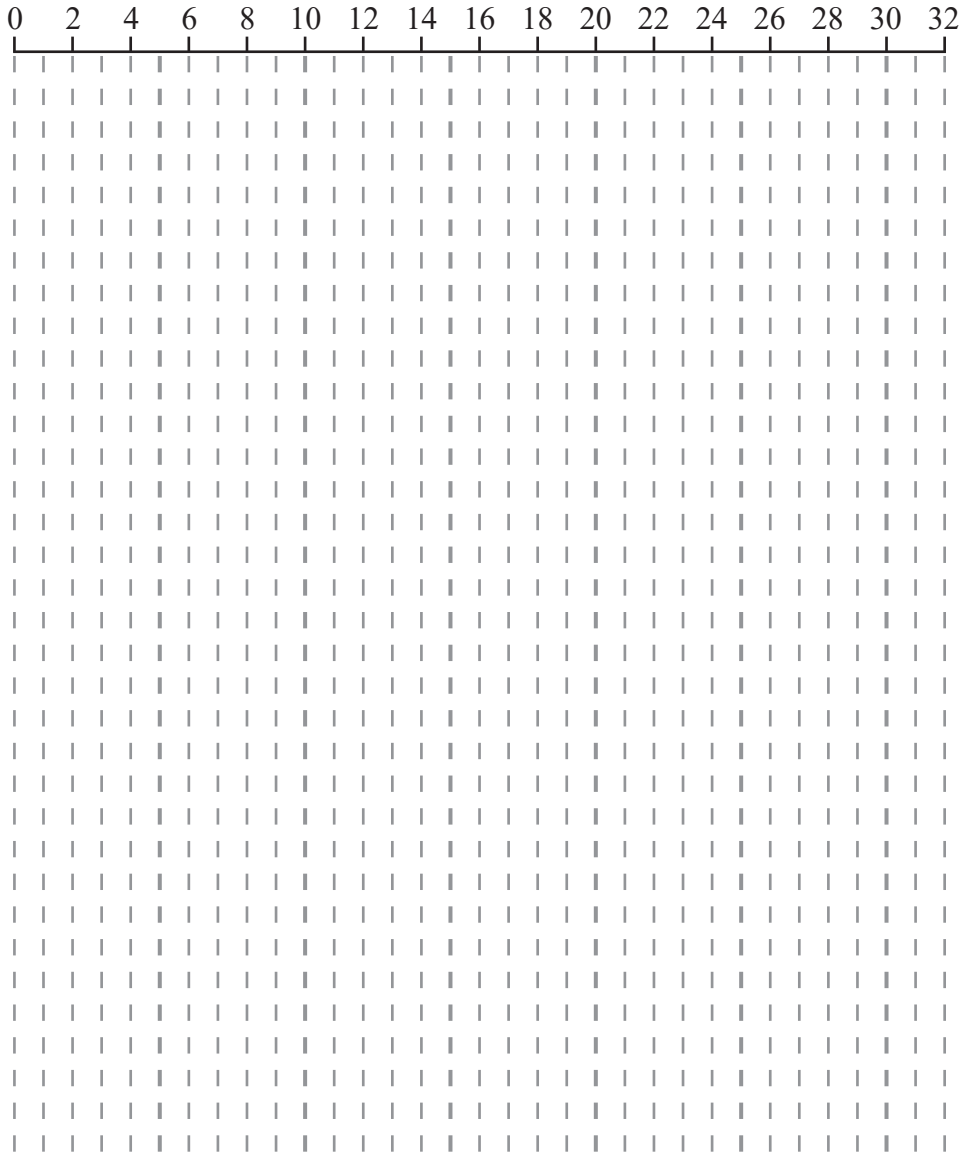
**Diagram 1**

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Leave blank

**Question 2 continued**




**Grid 1**

**Q2**

**(Total 10 marks)**