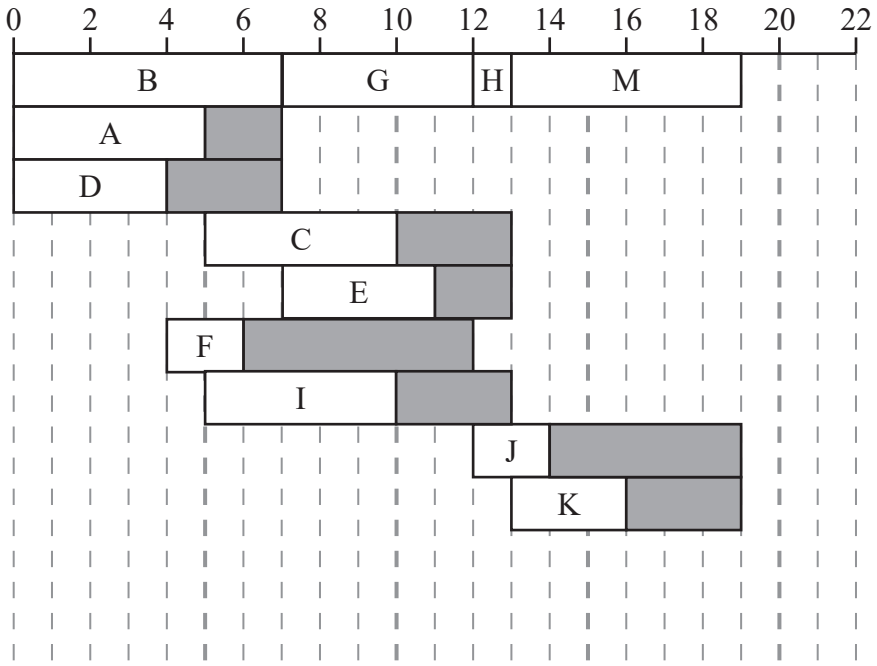
6.

Activity	Immediately preceding activities
A	-
B	-
C	A
D	-
E	A, B, D
F	D
G	A, B, D
H	F, G
I	A
J	F, G
K	C, E, H, I
L	I
M	C, E, H, I

(a) Draw the activity network for the project described in the precedence table, using activity on arc and the minimum number of dummies.

(5)



Grid 1

A cascade chart for all the activities of the project, **except activity L**, is shown on Grid 1.

The time taken to complete each activity is given in hours and each activity requires one worker.

The project is to be completed in the minimum time using as few workers as possible.

(b) State the critical activities of the project.

(1)

(c) Use the 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)

The duration of activity L is x hours. Given that the total float of activity L is at most 7 hours,

(d) determine the range of possible values for x.

(2)

(Total for Question 6 is 10 marks)