



Oxford Cambridge and RSA

**Friday 26 May 2023 – Afternoon**

**AS Level Further Mathematics B (MEI)**

**Y413/01 Modelling with Algorithms**

**Printed Answer Booklet**

**Time allowed: 1 hour 15 minutes**



**You must have:**

- Question Paper Y413/01 (inside this document)
- the Formulae Booklet for Further Mathematics B (MEI)
- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

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Last name

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**INSTRUCTIONS**

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the **Printed Answer Booklet**. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give your final answers to a degree of accuracy that is appropriate to the context.

**INFORMATION**

- This document has **16** pages.

**ADVICE**

- Read each question carefully before you start your answer.



**2(a)**  
**2(b)(i)**

Key:  
Order of labelling →  
Working values (do not cross out) →

Label ←

A •

B •

C •

D •

E •

F •

G •

H •

Length of quickest route from A to H =

**2(b)(ii)**

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**2(c)**

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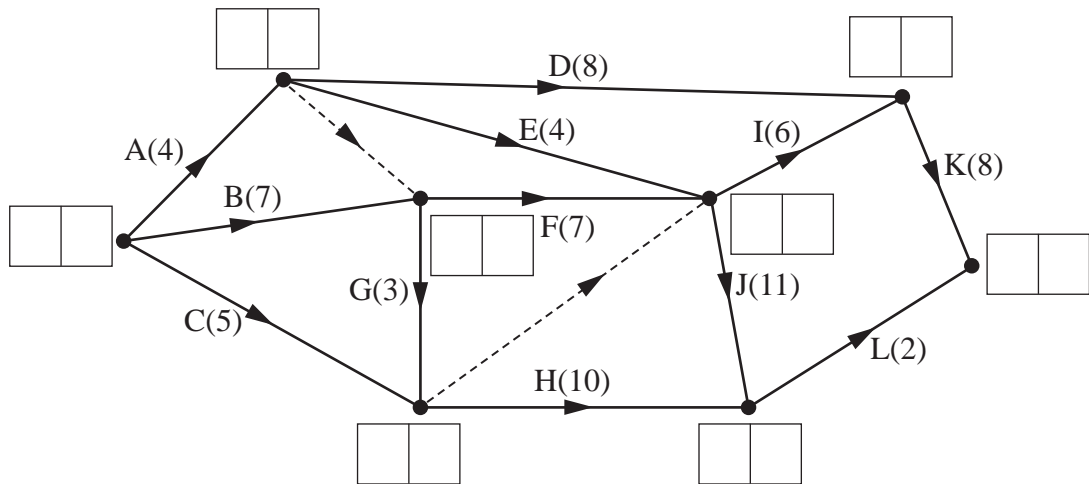
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|-----------------|----|----|----|---|----|----|----|----|----|----|
| <b>3(a)</b>     | 17 | 15 | 18 | 9 | 23 | 20 | 14 | 12 | 25 | 11 |
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| <b>3(b)(i)</b>  |    |    |    |   |    |    |    |    |    |    |
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| <b>3(b)(ii)</b> |    |    |    |   |    |    |    |    |    |    |
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| <b>3(c)</b>     |  |
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| <b>3(d)(i)</b>  |  |
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| <b>3(d)(ii)</b> |  |
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4(a)

| Activity | Immediate Predecessor(s) |
|----------|--------------------------|
| A        |                          |
| B        |                          |
| C        |                          |
| D        |                          |
| E        |                          |
| F        |                          |
| G        |                          |
| H        |                          |
| I        |                          |
| J        |                          |
| K        |                          |
| L        |                          |

4(b)



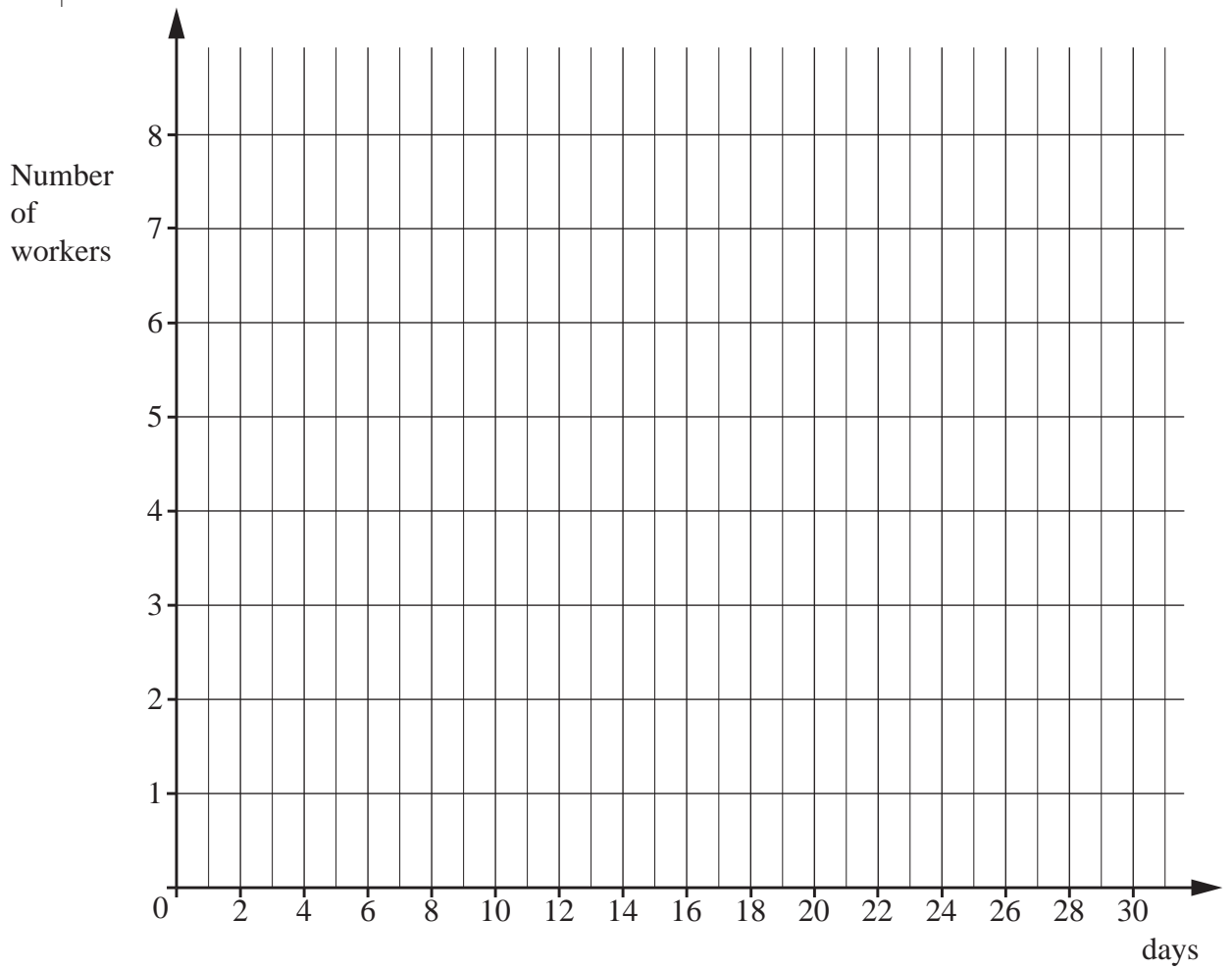
Minimum completion time =

Critical activities:

4(c)

4(d)(i)

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**There is a spare copy of this graph on page 12**

4(d)(ii)

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| <b>5(d)</b> | <b>Continued</b> |
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|             | <b>5(e)</b>      |
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4(d)(i) Spare copy of graph for Q4(d)(i)

