

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

Leave blank
-------------

General Certificate of Secondary Education  
June 2006



**MATHEMATICS (MODULAR) (SPECIFICATION B)**  
**Module 1 Higher Tier Section B**

**33001/HB**

**H**

Monday 19 June 2006 2.00 pm to 2.25 pm

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>• mathematical instruments</li> </ul> <p>You must <b>not</b> use a calculator.</p>	
---	--

Time allowed for Section B: 25 minutes

**Instructions**

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Do all rough work in this book.
- You may **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
- When you have answered Section B you may work again on Section A but you may **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

**Information**

- The maximum mark for Section B is 20.
- The marks for questions are shown in brackets.
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer book.

**Advice**

- In all calculations, show clearly how you work out your answer.

**There are no questions printed on this page**

Answer **all** questions in the spaces provided.

- 5 (a) Sunita uses a questionnaire to carry out a survey about mobile phones. She wants to find out the number of text messages people send.

Write down a question she could ask.  
Include a response section.

.....

.....

.....

.....

(2 marks)

- (b) The table shows the amount spent by 100 people on mobile phones in one month.

Amount, $x$ (£)	Frequency
$0 \leq x < 10$	31
$10 \leq x < 20$	24
$20 \leq x < 30$	22
$30 \leq x < 40$	15
$40 \leq x < 50$	8

Which class interval contains the median?  
You **must** show your working.

.....

.....

Answer .....  $\leq x <$  ..... (2 marks)

4
---

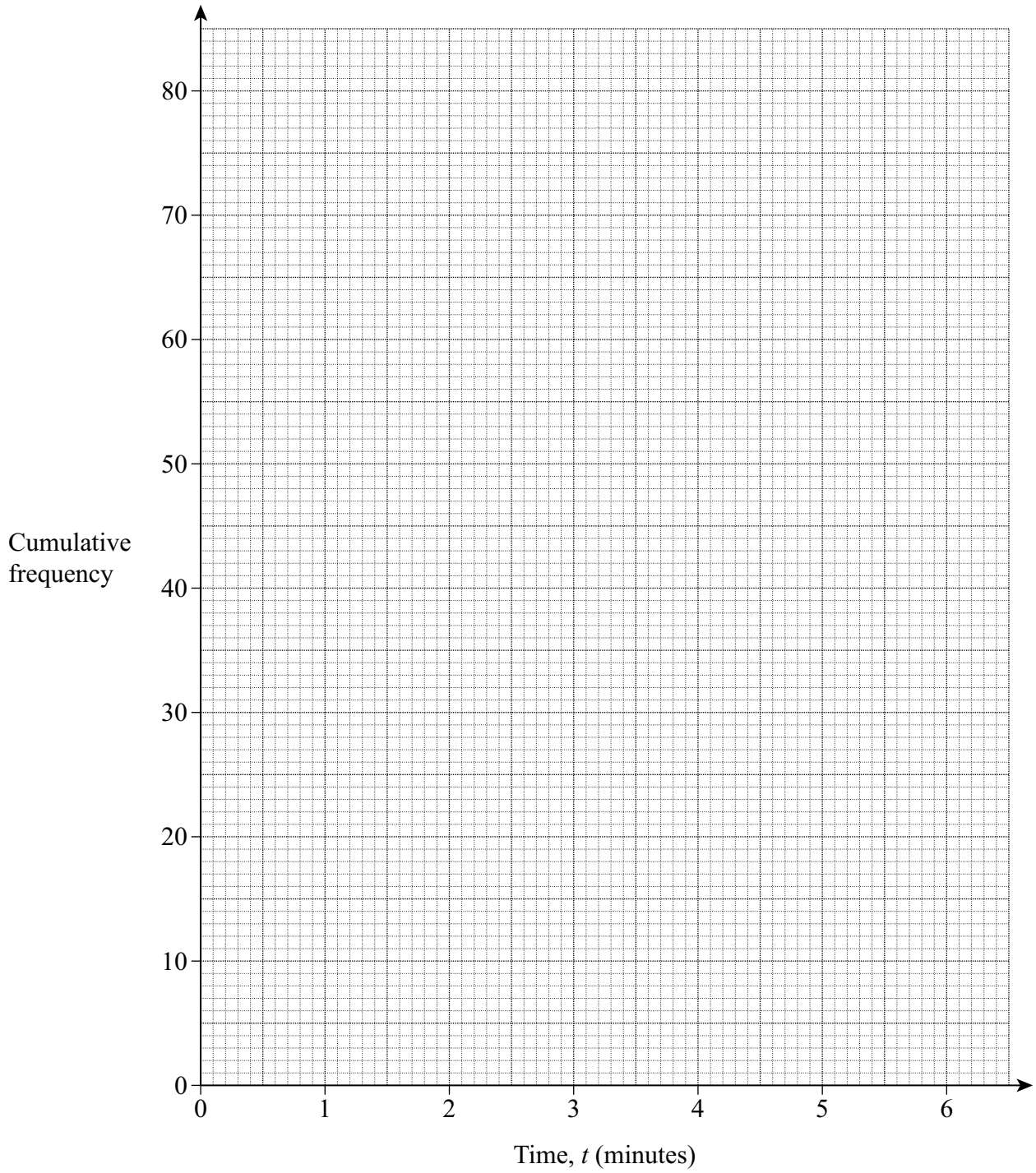
- 6 The table shows the time, in minutes, that 80 customers spent in the queue at a bank.

Time, $t$ (minutes)	Frequency
$0 < t \leq 1$	2
$1 < t \leq 2$	11
$2 < t \leq 3$	19
$3 < t \leq 4$	31
$4 < t \leq 5$	12
$5 < t \leq 6$	5

Time, $t$ (minutes)	Cumulative frequency
$\leq 1$	2
$\leq 2$	13
$\leq 3$	
$\leq 4$	
$\leq 5$	
$\leq 6$	

- (a) Complete the cumulative frequency table. (1 mark)
- (b) Draw a cumulative frequency diagram on the grid opposite. (3 marks)
- (c) Use your graph to estimate the number of customers who spent less than 3.5 minutes in the queue.

Answer ..... (1 mark)



Turn over 

7 The table shows the number of pupils in each year group of a school.

Year 7	Year 8	Year 9	Year 10	Year 11	Total
215	237	200	183	165	1000

Sandra wants to find out if the pupils enjoy school meals.

(a) Sandra asks ten Year 7 pupils for their views.

Give a reason why this sample does not fairly represent the views of all the pupils in the school.

.....

.....

(1 mark)

(b) Sandra then decides to take a 10% sample stratified by year group.

Complete the table to show the number of pupils she must choose from each year group.

.....

.....

.....

Year 7	Year 8	Year 9	Year 10	Year 11

(4 marks)

5
---

8 Four students sit a typing test.

(a) The probability that Anna passes the test is  $\frac{1}{2}$

The probability that Boris passes the test is  $\frac{4}{9}$

Calculate the probability that both Anna and Boris pass the test.  
Give your answer in its simplest form.

.....  
.....

Answer ..... (2 marks)

(b) The probability that Chloe passes the test is  $\frac{3}{5}$

The probability that both Chloe and Danny pass the test is  $\frac{7}{15}$

Calculate the probability that both Chloe and Danny fail the test.

.....  
.....  
.....  
.....  
.....

Answer ..... (4 marks)

**END OF QUESTIONS**

6
---

**There are no questions printed on this page**