Surname				Other	Names				
Centre Numb	er					Candid	ate Number		
Candidate Sig	gnatur	е							

General Certificate of Secondary Education November 2004

MATHEMATICS (MODULAR) (SPECIFICATION B) 33001/IA Module 1 Intermediate Tier Section A

Wednesday 17 November 2004 1.30 pm to 1.55 pm

In addition to this paper you will require:

- a calculator
- mathematical instruments
- a treasury tag.

Time allowed for Section A: 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 in the spaces provided.
- Do all rough work in this booklet.
- This paper is divided into two sections: Section A and Section B.
- After the 25 minutes allowed for Section A, you must put your calculator on the floor under your seat. You will then be given Section B.
- 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 A is 20.
- Mark allocations are shown in brackets.
- Additional answer paper and graph paper will be issued on request and must be tagged securely to this answer booklet.
- You are expected to use a calculator where appropriate.

Advice

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



For Examiner's Use								
Secti	on A	Section B						
Number	Mark	Number		Mark				
1	1							
2	7							
3	8							
4	9							
5								
Total Sect								
Total Sect								
TOTAL								
Examiner'	s Initials							

2

NO QUESTIONS APPEAR ON THIS PAGE

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

1 Sami keeps her credit card receipts in a drawer until her statement arrives. The table shows the number of each type of receipt in the drawer.

Petrol	Groceries	Hotels	Rail fares	Other
5	8	1	2	4

Sami picks a receipt at random from the drawer.

What is the probability that the receipt she picks is

(a) for hotels,

(b) **not** for hotels?

TURN OVER FOR THE NEXT QUESTION

APW/Nov04/33001/IA

2 The two-way table shows the number of credit cards and the number of bank accounts held by each of 50 people.

4

		0	1	2
	0	1	12	5
Number of	1	1	15	3
credit cards	2	0	8	2
	3	0	2	1

Number of bank accounts

(a) How many people have exactly one bank account and one credit card?

Answer (1 mark)

(b) How many people have more than one credit card?

Answer (1 mark)

3 A charity sells raffle tickets for 50p each. The winning prize is £100.

50 people bought 1 ticket each.80 people bought 2 tickets each.70 people bought 3 tickets each.95 people bought 4 tickets each.

- 35 people bought 4 tiekets each.
- 40 people bought 5 tickets each.

Calculate how much profit the charity made on this raffle.

TURN OVER FOR THE NEXT QUESTION

Turn over

4 Kali has a spinner with coloured sections of equal size.4 She wants to know the probability that her spinner lands on pink.5 She spins it 100 times and calculates the relative frequency of pink after every 10 spins.6 Her results are shown on the graph.



8

(b)	Fron	n the graph, estimate the probability of the spinner landing on pink.	
		Answer	(1 mark)
(c)	Kali The	's results confirm that her spinner is fair. spinner has five equal sections.	
	(i)	How many sections are pink?	
		Answer	(1 mark)
	(ii)	Kali spins the spinner two more times.	
		What is the theoretical probability that the spinner lands on pink bo	oth times?
		Answer	(2 marks)

TURN OVER FOR THE NEXT QUESTION



5 The journey times of 80 commuters are shown on the cumulative frequency diagram below.

END OF SECTION A

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Surname				Other	Names				
Centre Nu	mber					Candid	ate Number		
Candidate									

General Certificate of Secondary Education November 2004

MATHEMATICS (MODULAR) (SPECIFICATION B) 33001/IB Module 1 Intermediate Tier Section B

Wednesday 17 November 2004 2.00 pm to 2.25 pm

In addition to this paper you will require: mathematical instruments. You must **not** use a calculator.



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 in the spaces provided.
- Do all rough work in this booklet.
- 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.
- Mark allocations are shown in brackets.
- Additional answer paper and graph paper will be issued on request and must be tagged securely to this answer booklet.

Advice

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



33001/IB

2

NO QUESTIONS APPEAR ON THIS PAGE

Answer all questions in the spaces provided. 6 The number of letters received each day by a school is shown in the ordered stem-and-leaf diagram below. Key 1 8 represents 18 letters 0 6 8 6 7 2 2 4 7 1 2 8 7 7 9 2 0 3 (a) On how many days did the school receive 6 letters? (1 mark) Answer (b) What was the highest number of letters received? (1 mark)Answer (c) Write down the mode. (1 *mark*) Answer (d) When the number of letters for another day is included in the data, the range increases by 1. How many letters did the school receive on that day? Write down the two possible answers. (2 marks) Answer

Time, t (minutes)	Frequency
$0 < t \le 10$	4
$10 < t \le 20$	22
$20 < t \le 30$	18
$30 < t \le 40$	12

7 A manager recorded how long each customer spent in his shop. The table shows his results.

(a) Draw a frequency diagram to represent this data.



Answer $\langle t \leq \dots \rangle$ (1 mark)

(c) As each customer left the shop the manager gave them a questionnaire containing the following question.

Question:	How much mone	y did you spend in	the shop today?	
Response:	Less than £10	Less than £20	Less than £30	£30 or more

Write down one reason why the response section of this question is not suitable.

.....

.....

(1 mark)

TURN OVER FOR THE NEXT QUESTION

Turn over

8 (a) Write down the type of correlation shown in each of the scatter graphs, A and B, below.



(b) The marks for a group of pupils who sat two tests are shown in the scatter graph below.



(i) Draw a line of best fit on this scatter graph.

(1 mark)

(ii) Use your line of best fit to estimate the Test 1 mark for a pupil who scored 50 in Test 2.

Answer (1 mark)

4

- 9 Bob is taking penalties. The probability that Bob scores from the penalty spot is $\frac{3}{5}$ for each penalty. Bob takes two penalties.
 - -
 - (a) Draw a fully labelled tree diagram showing all the probabilities.

(3 marks)

(b) Calculate the probability that Bob scores exactly once on his two attempts.

END OF QUESTIONS