

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

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General Certificate of Secondary Education
November 2005



MATHEMATICS (MODULAR) (SPECIFICATION B)
Module 3 Intermediate Tier Section A

33003/IA

Monday 14 November 2005 9.00 am to 9.40 am



<p>In addition to this paper you will require:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments • a treasury tag. 	
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For Examiner's Use			
Section A		Section B	
Pages	Mark	Pages	Mark
2 – 3		2 – 3	
4 – 5		4 – 5	
6		6 – 7	
Total Section A			
Total Section B			
TOTAL			
Examiner's Initials			

Time allowed for Section A: 40 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 40 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 32.
- Mark allocations are shown in brackets.
- Additional answer 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.

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

- 1 Use your calculator to work out $\frac{1}{0.2^2}$

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Answer (2 marks)

- 2 In the USA, a ticket to a theme park costs \$105.
The exchange rate is \$1.75 to £1.

Find the cost of the ticket in £.

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Answer £ (2 marks)

- 3 Jill buys 3 lettuces and 1.75 kg of tomatoes.
She spends £2.92 in total.
Each lettuce costs 60p.

Find the cost of 1 kg of tomatoes.

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Answer pence (4 marks)

- 4 Sally drove 120 miles at an average speed of 50 mph.

Calculate the time taken for this journey.

Give your answer in hours and minutes.

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Answer hours minutes (4 marks)

- 5 Here is a method for multiplying a whole number by 101.

Step 1: put two zeros onto the right hand side of the number.

Step 2: add on the original number.

Use an example to show why this method works.

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(2 marks)

Turn over ►

- 6 Two friends, Alice and Kevin, eat 35 chocolates in the ratio 1:4
Kevin eats more chocolates than Alice.

How many more chocolates does Kevin eat than Alice?

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Answer (3 marks)

- 7 Find the value of $\sqrt{58 - 7.41^2}$

- (a) (i) Write down your full calculator display.

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Answer (1 mark)

- (ii) Write your answer to 3 significant figures.

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Answer (1 mark)

- (b) Evaluate 5^8

Write your answer in standard form.

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Answer (2 marks)

- 8 (a) Simon weighed 3.7 kg when he was born.
One year later he weighed 10.9 kg.

Calculate the percentage increase in his weight.

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Answer % (3 marks)

- (b) On Simon's 40th birthday, his weight is 60 kilograms.
This weight is given to the nearest kilogram.

Write down his minimum possible weight.

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Answer kilograms (1 mark)

TURN OVER FOR THE NEXT QUESTION

Turn over ►

- 9** In 2000, a motorway was used by 70 000 vehicles each day.
Since 2000, the number of vehicles which used the motorway increased by 6% every year.

How many vehicles used the motorway each day in 2005?
Give your answer to an appropriate degree of accuracy.

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Answer (4 marks)

- 10** Gotland is an island which forms part of Sweden.
The area of Gotland is 3140 square kilometres.
This area is 0.8% of the total area of Sweden.

What is the total area of Sweden?

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Answer square kilometres (3 marks)

END OF SECTION A

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General Certificate of Secondary Education
November 2005



**MATHEMATICS (MODULAR) (SPECIFICATION B)
Module 3 Intermediate Tier Section B**

33003/IB

Monday 14 November 2005 9.45 am to 10.25 am



<p>In addition to this paper you will require: mathematical instruments. You must not use a calculator.</p>	
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Time allowed for Section B: 40 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 32.
- Mark allocations are shown in brackets.
- Additional answer 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.

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

- 11** Greg buys 30 pencils for £6.

What is the cost of one pencil?
State the units of your answer.

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Answer (3 marks)

- 12** The same type of crystal glasses is sold in two different packs.

<p>Small pack</p> <p>Contents</p> <p>4 glasses</p>

£3.20

<p>Large pack</p> <p>Contents</p> <p>12 glasses</p>
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£10.20

Which size is the better value for money?

You **must** show your working.

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Answer (2 marks)

- 13** Yasmin worked for $4\frac{1}{2}$ hours each day.

In one week she worked 6 days and was paid £10 per hour.

How much did Yasmin earn in that week?

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Answer £ (3 marks)

- 14** You are given that

$$329 \times 3.96 = 1302.84$$

- (a) Use this calculation to explain why

$$32.9 \times 39.6 = 1302.84$$

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(1 mark)

- (b) Write down the value of

$$329 \times 0.003\,96$$

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Answer (1 mark)

Turn over ►

- 15 Ben wants to buy a football shirt.
He sees two advertisements for the shirt.

**SUPERSPORT
SAVERS**

Genuine Football Shirt

$\frac{1}{6}$ OFF

**recommended price
of £42**

Soccer Supplies

*Get your football shirt
here!*

20% off

**recommended retail price
of £42**

- (a) Find the cost of the shirt at Supersport Savers.

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Answer £ (3 marks)

- (b) Find the cost of the shirt at Soccer Supplies.

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Answer £ (3 marks)

- 16 (a) Work out $\frac{7}{8} - \frac{1}{3}$

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Answer (2 marks)

- (b) Find an approximate value of

$$\frac{391 \times 3.08}{0.613}$$

You **must** show all your working.

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Answer (3 marks)

- (c) Write 0.000 002 4 in standard form.

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Answer (1 mark)

- (d) Write down the value of $\sqrt{196}$

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Answer (1 mark)

Turn over ►

- 17 (a) Express 60 as a product of its prime factors.
Give your answer in index form.

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Answer (3 marks)

- (b) Find the Highest Common Factor (HCF) of 60 and 24.

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Answer (2 marks)

- 18** (a) Multiply 2.3×10^5 by 5×10^7

Give your answer in standard form.

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Answer (2 marks)

- (b) Divide 2.3×10^5 by 5×10^7

Give your answer in standard form.

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Answer (2 marks)

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE