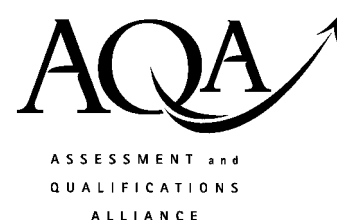


Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

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Free-Standing Mathematics Qualification  
 June 2006  
 Intermediate Level



**CALCULATING FINANCES**  
**Unit 4**

**6984/2**

Wednesday 17 May 2006 9.00 am to 10.15 am

- |  |
|--|
| <p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>• a calculator</li> <li>• a clean copy of the Data Sheet (enclosed)</li> <li>• a protractor</li> <li>• a ruler</li> </ul> |
|--|

Time allowed: 1 hour 15 minutes

**Instructions**

- Use blue or black ink or ball-point pen. Pencil should only be used for drawing.
- 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. Cross through any work you do not want marked.
- You may **not** refer to the copy of the Data Sheet that was available prior to this examination. A clean copy is enclosed for your use.

**Information**

- The maximum mark for this paper is 50.
- The marks for questions are shown in brackets.
- 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			
Number	Mark	Number	Mark
1		9	
2		10	
3			
4			
5			
6			
7			
8			
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			

**SECTION A**

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

Use **Internet shopping** on page 2 of the Data Sheet.

- 1** A spreadsheet is used to calculate the average cost of an internet transaction.

	A	B	C	D
1	<b>Year</b>	<b>Total value of UK internet payments (£ billion)</b>	<b>Number of transactions (millions)</b>	<b>Average cost of a transaction</b>
2	1999	1.5	18	
3	2000	3.5	57	
4	2001	6.4	105	
5	2002	9.0	140	
6	2003	13.1	200	

Source: *Mail on Sunday*, 16 May 2004

- (a) Complete the spreadsheet to give the average cost of a transaction in each of the given years.  
Give the average cost to the nearest pound. (4 marks)

*Space for working*

.....

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.....

- (b) State a formula which would give the content of cell D3.

.....

Answer .....  
(1 mark)

(c) What can you conclude from your values of the average cost?

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

(1 mark)

6

2 Ahmed pays £ 210 for a digital camera. He also pays a further £ 84 for a memory card.

Express the cost of the memory card as a fraction of the total cost which Ahmed pays for his two purchases.

Give your fraction in its lowest terms.

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.....

Answer .....

(3 marks)

3

3 Jerry and Nicky spend £ 50 on a wedding present.

They decide to divide the cost in the ratio 4 : 1, with Nicky paying least.

How much does Jerry pay?

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

Answer .....

(3 marks)

3

Turn over ►

**SECTION B**

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

Use **Family Mortgage Services** on page 2 of the Data Sheet.

- 4** James and Ellen need to take out a mortgage to buy a house. They estimate that they need to borrow £100 000. They decide to repay the loan over 30 years. The fixed interest rate is 5 %.

- (a) Write down the monthly repayment which James and Ellen will make.

Answer .....  
(1 mark)

- (b) By finding the total of all their repayments, calculate the total interest which they will be charged for this mortgage.

.....  
.....

Answer .....  
(3 marks)

- (c) Express the total interest which James and Ellen will be charged for borrowing this money as a percentage of the amount borrowed.

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

Answer .....  
(2 marks)

(d) For a fixed repayment period, the repayments depend upon the interest rate and the amount of the mortgage.

(i) If the interest rate increased by 50% – that is, from 5% to 7.5% – the repayments would increase.

By what percentage would the repayments increase?

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Answer .....  
(3 marks)

(ii) Why do the repayments **not** increase by 50% if the interest rate increases by 50%?

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(1 mark)

<b>10</b>

**Turn over for the next question**

**Turn over ►**

**SECTION C**

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

Use **Taxation 2005 – 2006** on page 3 of the Data Sheet.

5 Jack earned £4010 per month and had a tax-free allowance of £4895 .

Calculate:

(a) Jack’s taxable income;

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Answer .....  
(3 marks)

(b) the amount of income tax which Jack paid in the year.

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Answer .....  
(5 marks)

- 6 Emma earns £ 310 per week.  
Emma is **not** contracted out for National Insurance contributions.

Calculate the amount Emma pays weekly in National Insurance contributions.

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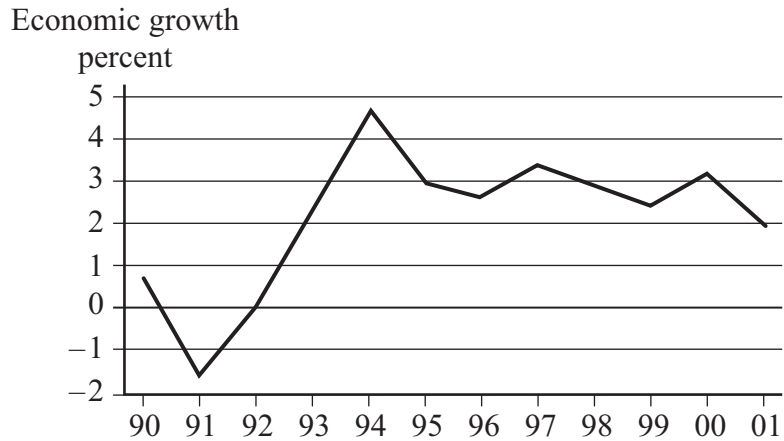
Answer .....  
(3 marks)

<b>3</b>

**Turn over for the next question**

**Turn over ▶**

7 The graph below shows the economic growth of the UK in the period 1990–2001.



Source: *news.bbc.co.uk*, 25 October 2002

(a) In which year was the economic growth the greatest?  
State the economic growth in that year.

.....  
.....

Answer Year .....

Percentage economic growth .....

(2 marks)

(b) During which period was there the greatest increase in the economic growth of the UK?  
State how you would recognise this from the graph.

Answer .....

Reason .....

.....  
.....

(3 marks)

5



**SECTION D**

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

- 8 In 2003, sales of small packets of salty snacks in the UK were worth £ 283.4 million. This was a 10.9 % reduction on the sales in 2002.

Source: *Express and Star*, Wolverhampton, 18 May 2004  
 Data supplied by TNS UK

How much were the sales of small packets of salty snacks worth in 2002?

.....

.....

.....

.....

Answer .....

(3 marks)

<b>3</b>

- 9 A shopkeeper normally sells clothes at a price that includes a mark-up of 80 % for profit. In a sale, she reduces all her prices by 25 %.

What is the percentage profit the shopkeeper makes on the clothes sold in the sale?

.....

.....

.....

.....

Answer .....

(4 marks)

<b>4</b>

**Turn over for the next question**

**Turn over ►**

- 10** Natalie invests £ $S$  at a fixed rate of interest. The interest is paid at the rate of 0.5% every two months.  
After  $n$  years, the amount of money which Natalie will have as a result of her investment is £ $P$ , where  $P$  is given by

$$P = S \times 1.005^{6n}$$

- (a) Natalie invests £5000 for 1 year.

Use the formula to find the total amount of money which Natalie will have at the end of the year.

.....  
 .....  
 .....  
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Answer .....  
 (3 marks)

- (b) Hence find the AER (Annual Equivalent Rate) for this investment.

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 .....

Answer .....  
 (2 marks)

5
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**END OF QUESTIONS**

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

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