



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

CANDIDATE  
NAME

CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**COMMERCIAL STUDIES**

**7101/02**

Paper 2 Arithmetic

**October/November 2010**

**2 hours**

Candidates answer on the Question Paper.

Additional Materials: Mathematical tables

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name in the spaces provided above.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **all** questions in **Section A** and any **two** questions from **Section B**.

All working must be clearly shown in the space provided and should be done on the same sheet as the rest of the answer.

The businesses described in this question paper are entirely fictitious.

You may use a calculator in this examination.

**N.B. £1 = 100p**

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

**For Examiner's Use**

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This document consists of **12** printed pages.



**Section A** (76 marks)For  
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UseAnswer **all** questions in this section.

- 1 (a) A sports car uses one gallon of fuel every 14.6 miles.  
The petrol tank holds  $17\frac{1}{2}$  gallons of fuel.  
How far can the car travel using one tank of fuel?

Answer (a) .....miles [3]

- (b) A shop is open six days a week. It opens from 0930 to 1730 on five days a week and from 0900 to 1300 on the sixth day.  
For how many hours is it open during a week?

Answer (b) ..... h [3]

- (c) A car is travelling along a main road at 120 kilometres per hour.  
Find its speed in metres per second.

Answer (c) ..... m/s [3]

## 2 Calculate

- (a)  $(67 - 38 \times 2 + 11) \div 5$ ,

Answer (a) ..... [3]

- (b) the sum of \$12.8 million and \$10.65 million, giving your answer

- (i) in millions,

Answer (b)(i) \$ ..... millions [1]

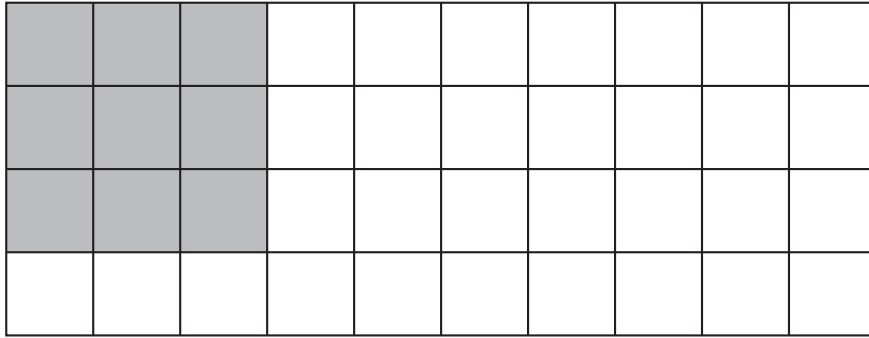
- (ii) fully in figures,

Answer (b)(ii) \$ ..... [2]

- (c)  $\frac{3}{80}$  of 6.4 metres, giving your answer in centimetres.

Answer (c) ..... cm [3]

3 (a)



(i) What fraction of the diagram is shaded?

Answer (a)(i) ..... [1]

(ii) What percentage of the diagram is shaded?

Answer (a)(ii) .....% [2]

(b) An empty van weighs 6.5 tonnes. It is loaded with 60 identical boxes of sugar each weighing 75 kg.

Calculate the weight of the van, in tonnes, when the boxes are loaded.

Answer (b) ..... tonnes [3]

(c) Calculate  $275 \div 325$ , giving your answer correct to 4 decimal places.

Answer (c) ..... [2]

- 4 The Annual Maintenance Charge (AMC) for an apartment in a city increased in line with the Retail Price Index (RPI).

- (a) In 2006 the RPI was 192 and the AMC was \$960.

Calculate how much the AMC was in 2007 when the RPI was 198.

*Answer (a) \$ ..... [2]*

- (b) In 2009 the AMC was \$1025.

Calculate the RPI.

*Answer (b) ..... [2]*

- (c) Calculate the percentage increase in the AMC from 2006 to 2009.

*Answer (c) .....% [4]*

- (d) A person living in an apartment is required to pay insurance premiums as follows:

- premises valued at \$200 000 at a premium of  $\frac{1}{2}\%$ ,
- contents valued at \$40 000 at \$2.50 per \$1000,
- third party liability of \$1 000 000 at \$20.

Calculate the total premium payable.

*Answer (d) \$ ..... [6]*

- 5** Patrick went fishing for a day and caught 25 fish.  
The length of each fish that he caught was measured.  
The results are shown in the table.

Length (cm)	28	29	30	31	32
Number of fish	11	3	1	8	2

**(a)** Calculate

**(i)** the mode,

*Answer (a)(i)* ..... cm [1]

**(ii)** the median,

*Answer (a)(ii)* ..... cm [2]

**(iii)** the mean.

*Answer (a)(iii)* ..... cm [5]

**(b)** Fish that are either 28 or 29 cm long have to be released back into the water.

Using the figures in the table, calculate the percentage of fish he released.

*Answer (b)* .....% [4]

- 6** A car is purchased new in the UK at a cost of £12 300.  
It depreciates by 38% in the first year and by 18% a year for each of the following years.

**(a)** Calculate the value of the car at the end of the first year.

*Answer (a) £* .....[3]

**(b)** Calculate the value of the car after 4 years.

*Answer (b) £* .....[5]

**(c)** The car can be purchased new from another country and shipped to the UK at a cost of £9300.

An additional cost of 20% of the purchase price is added for import duty.

How much money would be saved by purchasing the car using this method?

*Answer (c) £* .....[4]

- 7 (a) Zainab is thinking of buying a camera.  
The cash price of the camera is \$260.  
The credit price of the camera is: a deposit of 14% of the cash price followed by 12 monthly payments of \$25.

Calculate the difference between the cash price and the credit price.

Answer (a) \$ .....[4]

- (b) Zainab decides not to buy the camera and invests the \$260 in a savings account.  
The account pays **simple interest** at a rate of 6% a year.

Calculate the total amount she will have after 3 years.

Answer (b) \$ .....[3]

- (c) Zainab has to pay income tax at 22% on the interest.

Calculate how much tax she pays.

Answer (c) \$ .....[2]

- (d) At the end of the 3 years, the cash price of the camera has fallen by 40%.

Calculate how much Zainab will pay if she now decides to buy the camera.

Answer (d) \$ .....[3]

**Section B** (24 marks)

Answer any **two** questions from this section.

- 8 (a)** A shop is owned by 3 partners, Anne, Bella and Kris, who invested capital of \$22 000, \$28 000 and \$30 000 respectively.  
They agreed to share **net** profits in the ratio of the capital invested.  
The pre-tax profit last year was \$85 600.  
Non taxable expenses were \$19 200.  
Tax was paid at a rate of 20% on the remainder.  
Calculate how much Kris receives.

*Answer (a) \$ .....[7]*

- (b)** A sales representative is paid commission of 4% on sales.

- (i)** Calculate the commission on sales of \$63 800.

*Answer (b)(i) \$ .....[2]*

- (ii)** What value of sales produces a commission of \$5000?

*Answer (b)(ii) \$ .....[3]*



- 9 The foreign exchange office on board a cruise ship offers the following rates of exchange

	UK £1
Euros (€)	1.20
Rupees (R)	84.10

- (a) The ship docks in Italy and a passenger spends £150 to buy euros.

How many euros does the passenger receive if the commission charge is 2%?  
Give your answer correct to the nearest euro.

*Answer (a) € ..... [5]*

- (b) Another passenger has €380 and spends €140 in Italy.  
He converts his remaining euros into Rupees ready for a stop in India.

The exchange office charges no commission for changing the Euros into Pounds but then charges a flat fee of £2 for changing Pounds into Rupees.

How many Rupees did the passenger receive?  
Give your answer correct to 3 significant figures.

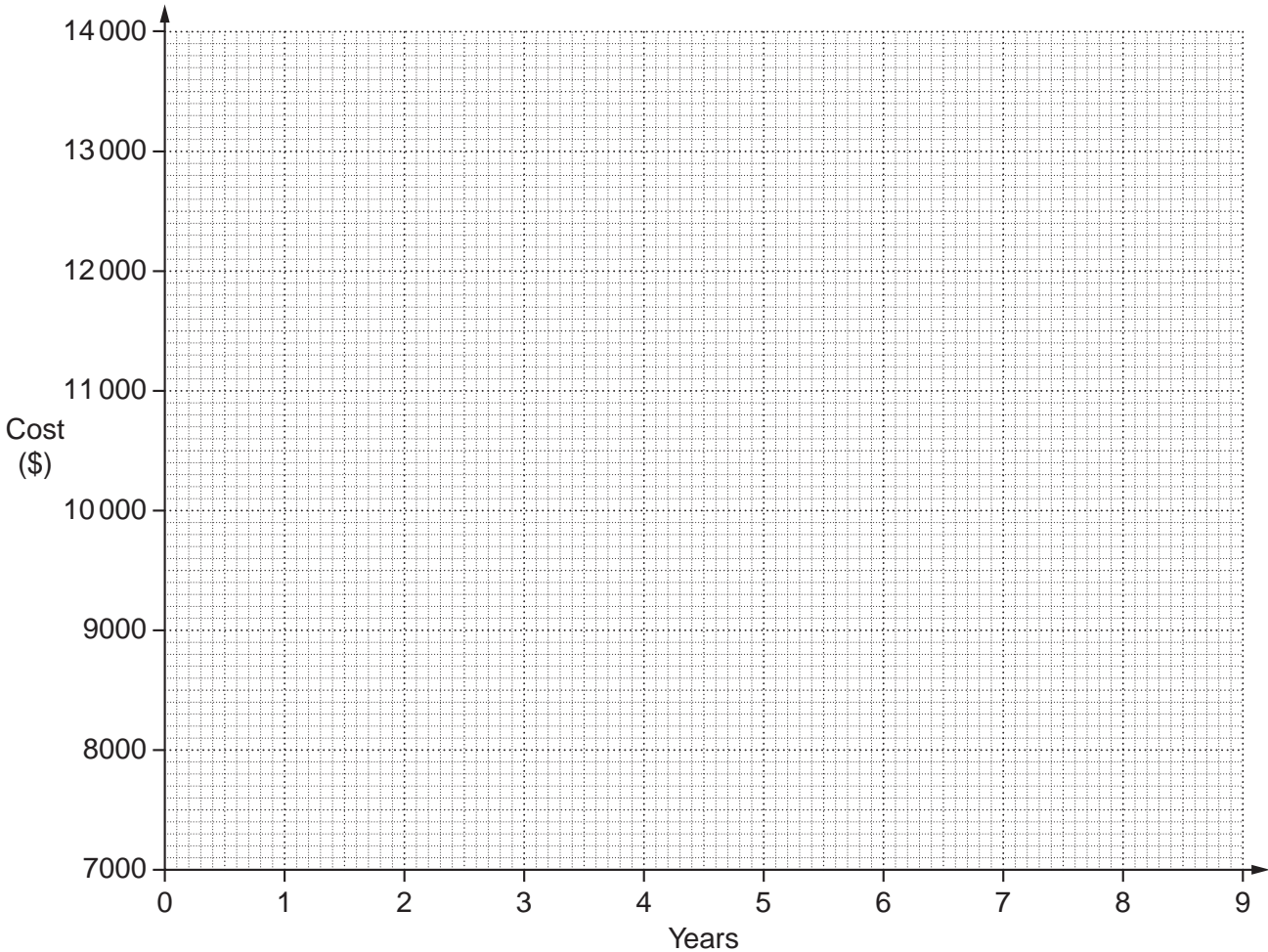
*Answer (b) R ..... [7]*

10 (a) The table gives the total cost of a loan for different periods of time.

Each amount is rounded to the nearest \$100.

Number of years	2	4	5	6	7	9
Cost \$	9000	10 100	10700	11 400	12 100	13 600

(i) Draw a graph to show this information.



[4]

(ii) Use your graph to find the initial loan.

Answer (a)(ii) \$ ..... [2]

(iii) What is the cost, if the loan is taken out for 8 years?

Answer (a)(iii) \$ ..... [1]

(b) A company borrows \$25 000 at 5.6% a year **compound interest** over 3 years.

How much will they have to repay at the end of the loan period?

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*Answer (b)* \$ .....[5]

- 11 (a) A shop adds on 90% to the cost price of a toy to work out how much the selling price should be.

The shop offers its employees a staff discount of 20% on the selling price.

An employee buys a toy with a cost price of \$80.

Calculate the percentage profit made by the shop on this sale.

Answer (a) .....% [6]

- (b) The shop has a seasonal promotion and reduces its prices by a further 15%.

An employee pays \$64.60 for a toy, after staff discount and the promotion.

Calculate the cost price.

Answer (b) \$ ..... [6]

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