



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**COMMERCIAL STUDIES**

**7101/02**

Paper 2 Arithmetic

**October/November 2008**

**2 hours**

Additional Materials:      Answer Booklet/Paper  
   Graph paper (2 sheets)  
   Mathematical tables



**READ THESE INSTRUCTIONS FIRST**

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.  
Write your Centre number, candidate number and name on all the work you hand in.  
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.

**Section A**

Answer **all** questions.

**Section B**

Answer **any two** questions.

All working must be clearly shown. It 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.

This document consists of **7** printed pages and **1** blank page.



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

- 1** Calculate
- (a)  $\frac{5}{8}$  of £6133 correct to the nearest penny. [3]
- (b)  $1.5 \times 4.25 - 2.125 \times 0.6$ . [3]
- (c) The cost per kilogram when a fish of mass 0.691 kg is sold for £5.11. [3]
- 2** Find
- (a)  $67\frac{1}{2}\%$  as a fraction in its lowest terms. [3]
- (b) 24% of £4862 correct to the nearest pound. [3]
- (c) The percentage increase when the price of a product rises from \$5.52 to \$5.98. [3]
- 3** (a) A shop owner sells a soft toy for \$120 and makes a profit of 45% of the selling price. If the price of the soft toy is reduced to \$110, what is the percentage profit on the new selling price? [5]
- (b) A library is open from 0930 to 1700 on Monday to Friday and from 0900 to 1230 on Saturday.  
For how many hours is the library open each week? [5]
- 4** In 2005 a company bought a fleet of 6 cars. The list price of each car was \$15855.
- (a) The company received a 12% trade discount as a fleet buyer.  
How much did the company pay for the six cars? [3]
- (b) At the end of the first year, each car had depreciated to 60% of its list price.  
If the company sold the cars at the end of the first year, how much money would it have received? [3]
- (c) The company decided to keep the cars for another year and in 2007 it sold each car for \$8278.  
Calculate the percentage depreciation on the list price. [3]
- (d) The running costs for the cars for the 2 years were 25 cents per km.  
The 6 cars covered a total distance of 280 000 km.  
How much did the cars cost to run? [3]

**5 Answer all of question 5 on graph paper**

- (a) A boat salesman is offered a job selling boats which cost \$20 000 each, but he has to choose between two commission packages.

Commission Package A: No salary but 10% commission on each sale.

Commission Package B: A basic salary of \$8000 and 2% commission on each sale.

He works out what his total salary would be from each commission package in a year.

**Copy and complete** the table to show his calculations.

[4]

Number of boats sold	0	2	4	6
Total salary for Package A				
Total salary for Package B				

- (b) Draw a graph to show the information in the table.  
Use a scale of 1 cm to 1 boat on the horizontal axis.  
Use a scale of 1 cm to \$1000 on the vertical axis. [4]
- (c) How many boats must he sell to make Commission Package A the better choice? [2]
- (d) He decides to accept Commission Package B.  
In his first year he sells 10 boats.  
How much money does he earn? [2]

- 6 (a)** A shop in Singapore advertised a TV in a Sale.  
The normal price before the Sale was S\$2099.

The shop offers two payment plans:

Plan A: A price reduction in the Sale of 34% for cash.

Plan B: S\$13.05 a week over 4 years.

Calculate the difference in price between the two payment plans.

[7]

- (b) An investor buys a 3-year bond for S\$80 000 at 5.42% compound interest per year.  
What is the value of the bond at the end of the 3 years?  
Give your answer to the nearest dollar. [5]

7 The table shows the sales of one brand of trainers in a week.

Size	34	36	38	40	42	44	46	48
Number of sales	4	6	8	5	10	9	8	5

- (a) Write down the modal size. [1]
- (b) Find the median size. [2]
- (c) Using graph paper, draw a bar chart to show the information in the table. [4]
- (d) The profit on each sale was \$21.25.  
Calculate the total profit for the week. [3]
- (e) Tax at 22.5% was paid on the profits.  
Calculate the amount of tax paid. [2]

**Section B** (24 marks)

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

- 8** A motorist has a car insurance policy for which the premiums increase in line with the retail price index (RPI), as shown in the table.  
The motorist's no-claims bonus (NCB) is also shown in the table.

Year	RPI	Premium £	NCB %
2004	100	400	40
2005	(b)	424	50
2006	108	(c)	60
2007	(d)	(d)	65

- (a)** How much did he pay for his car insurance in 2004? [2]
- (b)** His premium before NCB in 2005 was £424.  
Calculate the RPI for 2005. [2]
- (c)** Calculate the premium in 2006. [2]
- (d)** In 2007 his NCB had risen to 65% and he paid a premium of £156.80.  
Calculate
- (i)** the premium before the bonus (NCB). [3]
- (ii)** the percentage rise in the cost of the premiums from 2004 to 2007. [3]

- 9 A wholesaler buys goods from a manufacturer on credit as follows.

Jan 3	£6000
Jan 10	£2100
Jan 11	£5000
Jan 16	£3000
Jan 20	£3900

- (a) Calculate the date on which a single payment would be equitable. [6]
- (b) The manufacturer offers a trade discount of 12% on the dates that the wholesaler spends more than £4500.

Calculate how much the wholesaler must pay for her goods in Question 9(a) if a 3% discount is also given for prompt payment on this date. [6]

- 10 An investor has the following shares portfolio on 2 January 2008.

Company	Number of shares	Price per share \$
Orion Bank	600	6.89
Wise Insurance	2000	1.982
South Electric	1300	4.93

- (a) Calculate the value of the portfolio on 2 January 2008. [4]
- (b) By 2 May, Orion Bank shares had risen by 8%.  
The investor sold the shares and was charged a commission of 2%.  
Calculate how much the investor received. [4]
- (c) The investor spent \$4000 of the proceeds from the sale of the Orion Bank shares on buying newspaper shares. The newspaper shares cost \$5.50 each and the commission charge was \$150.
- (i) How many shares did the investor buy? [2]
- (ii) What % commission was charged? [2]

- 11 A British tourist visited New Zealand for a week and stayed in several hotels. The hotels all charged \$130 for one night. The rate of exchange of £1 in New Zealand dollars (NZ\$) varied over the week.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Rate of exchange £1 in NZ\$	2.5254	2.5203	2.5205	2.4927	2.4951	2.5181	2.5583

Giving your answer in pounds and pence correct to the nearest penny, calculate

- (a) The cost of the hotel on Wednesday. [2]
- (b) The cost of the cheapest night. [2]
- (c) The mean cost. [4]
- (d) The tourist paid £350 on the Internet, in advance, for all the hotels on a day when the exchange rate was 2.5164 New Zealand dollars for £1. How much money did the tourist save in New Zealand dollars? [4]

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