



COMMERCIAL STUDIES

7101/02

Paper 2 Arithmetic

October/November 2007

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 **6** printed pages and **2** blank pages.



Section A (76 marks)Answer **all** questions in this section.**1** Calculate

- (a) the cost of 450 grams of strawberries at £4.40 per kilogram, [3]
- (b) $4.6 \times 8\frac{1}{2} - 3\frac{1}{2} \times 2.1$, [3]
- (c) the largest share when \$6000 is shared in the ratio 2:7:6. [3]

2 Calculate

- (a) $1.25 \div 0.85$ giving your answer correct to 2 decimal places, [2]
- (b) $0.85 \div 1.25$ as a fraction in its lowest terms, [2]
- (c) \$250 as a percentage of \$200. [3]

3 (a) Rubbish can be taken to a waste disposal site from 0800 to 1630 on Monday to Friday, from 0930 to 1700 on Saturday and from 0800 to 1200 on Sunday.

For how many hours is the site open each week? [5]

- (b) A builder takes rubbish to the waste disposal site in a truck. He is charged \$50 + tax at $17\frac{1}{2}\%$ each time he empties his truck at the site. How much does it cost him if he makes 6 trips to the waste disposal site? [4]

- (c) The journey from the building site to the waste disposal site is 14 miles. Give this distance in kilometres (5 miles = 8 kilometres). [2]

4 (a) The Orion Bank is offering a five-year bond with a fixed simple interest rate of 6.1%. An investor buys a £6000 bond.

The investor sells the bond at the end of 4 years but has to pay a penalty of 6 months' interest for selling the bond early.

How much does the investor receive? [4]

- (b) The Orion Bank also offers a savings account with compound interest of 5.1%.

How much would the investor receive if the £6000 had been invested in this account for the 4 years? [6]

- 5 (a) An English tourist went on holiday to Singapore.
The tourist exchanged £350 for Singapore dollars. The exchange rate was £1 = S\$2.9286.
There was a commission charge of 2%, payable in Singapore dollars.
How many Singapore dollars did the tourist receive, giving your answer correct to the nearest dollar? [5]
- (b) The tourist hired a taxi at Changi Airport for the journey to a hotel in Singapore, a distance of 25 kilometres. The charges for the taxi are given in the table.

| | |
|--|---------|
| First kilometre | S\$2.40 |
| For each of the next 9 kilometres | S\$0.40 |
| For each kilometre after 10 kilometres | S\$0.50 |
| Airport surcharge | S\$5.00 |

- (i) Calculate the cost of the taxi from the airport to the hotel. [5]
- (ii) There is a credit card surcharge which is 10% of the total fare.
Calculate the cost of paying the fare by credit card. [2]
- 6 In a competition a golfer plays 36 holes.

- (a) The scores for the first **35 holes** are recorded as follows.

| | | | | | |
|--------------------------|---|----|---|---|---|
| Number of shots per hole | 3 | 4 | 5 | 6 | 7 |
| Frequency | 3 | 12 | 8 | 7 | 5 |

- (i) Construct a bar chart to show this information. [4]
- (ii) State the mode. [1]
- (iii) Work out the median score. [2]
- (b) The golfer must have a mean score of 5 or less for **all 36 holes** to qualify for the next round of the competition.
What is the largest number of shots the golfer can take on the 36th hole and remain in the competition? [6]

- 7 (a) A worker is paid in line with the Retail Price Index (RPI).
- (i) In 2002 the RPI was 105 and the worker earned \$73.50 a week.
Calculate how much the worker was paid in 2003 when the RPI was 108. [2]
- (ii) In 2007 the worker earned \$80.50 a week.
Calculate the RPI. [2]
- (b) A shop manager is paid a basic rate of \$400 a week.
A commission bonus is also paid on all sales at a rate of:

1% for sales revenue up to \$10000 a week

2% for sales revenue above \$10000 a week subject to a maximum of \$250 a week.

The sales revenues for 4 weeks are as follows:

| | Sales Revenue \$ |
|--------|---------------------|
| Week 1 | 8000 |
| Week 2 | 14000 |
| Week 3 | 11000 |
| Week 4 | 4000 |

- (i) Calculate the shop manager's total earnings for the 4 weeks. [8]
- (ii) Calculate the shop manager's total earnings as a percentage of the total sales revenue for the 4 weeks. [2]

Section B (24 marks)

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

- 8 (a) A householder insures the **contents** of a house as follows:

| | |
|---------------------|------------------------------|
| General contents | \$40000 at \$3.50 per \$1000 |
| 2 Bicycles | \$9 each |
| Sports equipment | \$5 |
| Money and jewellery | \$1800 at 2% |

Calculate the total premium payable. [6]

- (b) The householder also decides to insure the **house** with the same insurance company. The cost of this insurance is at a rate of \$1.30 per \$1000 of the value of the house. The householder receives a discount on this rate of 20% for insuring both the contents and the house. The house is valued at \$205000. There is also a tax of 5% to be paid on the premium after discount. Calculate the total premium payable on the house. [6]

- 9 (a) In January 2003 a company purchased 50 computers at a cost of £640 each.

Calculate

- (i) the total cost of buying the computers, [2]
- (ii) the total value of the computers after 3 years if the value of the computers depreciated at 25% a year, [5]
- (iii) the depreciation of the computers as a percentage of the purchase price. [2]
- (b) In January 2007 the company sold the 50 computers at £10125 and used this money to purchase new computers costing £337.50 each. How many **extra** computers will they now need to purchase to maintain a stock of 50 computers? [3]

- 10 (a)** In January 2006 an investor purchased 1600 shares in an insurance company at £1.24 per share.
The broker charged 3% commission on this purchase.
Calculate the total cost of the investment. [5]
- (b)** In June 2006 the investor received a dividend of 5p a share.
In December 2006 the insurance company was taken over and the investor sold the shares at £1.65 per share.
The commission was at a fixed rate of £15.
Calculate the total profit made by the investor from buying and selling the shares. [7]
- 11** An Arbitrage transaction was set up in January by a UK company for the payment of an 80000 euros bill in June.
- (a)** The cost of the bill in January was £57000.
What was the exact value of the exchange rate in January for 1 euro in pounds (£)? [2]
- (b)** The company purchased dollars with the £57000 at an exchange rate of £1 = \$1.825.
How many dollars did the company purchase? [2]
- (c)** In June the company sells the dollars for pounds at an exchange rate of £1 = \$1.725.
How many pounds (£) did the company buy? [2]
- (d)** The company then buys euros to pay the original bill at an exchange rate of £1 = 0.7482 euros.
How much profit or loss did the company make on this Arbitrage transaction?
Give your answer in pounds (£). [6]

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