

UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE
Joint Examination for the School Certificate
and General Certificate of Education Ordinary Level

COMMERCIAL STUDIES

7101/2

PAPER 2 Arithmetic

OCTOBER/NOVEMBER SESSION 2001

2 hours

Additional materials:

Answer paper

Graph paper (2 sheets)

Mathematical tables

TIME 2 hours

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided on the answer paper/ answer booklet.

Answer **all** questions in Section I and any **two** questions from Section II.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

All working must be clearly shown. It should be done on the same sheet as the rest of the answer.

INFORMATION FOR CANDIDATES

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

The businesses mentioned in the questions are entirely fictitious.

You may use a calculator in this examination.

N.B. £1 = 100p

This question paper consists of 6 printed pages and 2 blank pages.

Section I (76 marks)

Answer **all** questions in this section.

1 Calculate:

(a) $0.096 \div 1.2$, giving your answer as a fraction in lowest terms, [3]

(b) $\frac{3}{10}$ of 3 kilograms, giving your answer in grams, [3]

(c) the distance in kilometres between two towns which are 133 miles apart (1 kilometre = $\frac{5}{8}$ mile).
Give your answer to the nearest kilometre. [3]

2 (a) A market stall sells oranges at 39 cents for 6 oranges.

Calculate the cost of 20 oranges. [3]

(b) A car park makes a charge of \$2.40 for the first hour plus 80 cents per hour for each hour or part hour thereafter.

Calculate the charge for a stay of 4 hours 20 minutes. [3]

(c) An aircraft departed at 0942 on a flight planned to take 1 hour 48 minutes. The aircraft arrived 14 minutes early at its destination.

At what time did the aircraft arrive? [3]

3 (a) A wholesaler borrowed £4850 for 3 years and agreed interest terms of 11% per annum simple interest on the £4850 for the 3 years. She agreed to repay the principle and interest in equal monthly instalments over the 3 years.

Calculate the amount of each monthly instalment. [5]

(b) The bill for a motor car repair was:

Cost of parts £38.06

Cost of labour $4\frac{1}{2}$ hours at £32 per hour

Value Added Tax (VAT) at $17\frac{1}{2}\%$ added to the total of parts and labour

Calculate the amount of the final bill. [5]

- 4 (a) The table shows the rates of commission charged by an auctioneer.

value of sales	rate of commission
0 dollars up to 15 000 dollars	2%
over 15 000 dollars up to 40 000 dollars	$1\frac{1}{2}\%$
over 40 000 dollars	$\frac{3}{4}\%$

Calculate the total commission charged on sales valued at 58 100 dollars. [6]

- (b) When a trader sells towels at £2.24 each, he makes a profit of 40% on cost price.

Calculate

(i) the cost price to the trader of one towel, [3]

(ii) how many towels the trader must sell to make £96 profit. [3]

- 5 (a) Three business partners A, B and C invested a total of \$56 000 in a new business. Their investments were in the ratio 6 : 5 : 3. They agreed to share any profits in proportion to their investments.

(i) Calculate the amount that each partner invested. [3]

(ii) Calculate the total profit made when A's share was \$13 200. [3]

- (b) A businessman in the UK bought a new car for £15 200 and sold it three years later for £4250.

(i) Calculate the depreciation of the car as a percentage of its new price. [3]

The car could have been bought new in the US for \$17 500 and transported to the UK for \$150.

(ii) How much, in £ sterling, would the businessman have paid to buy and transport the car when the rate of exchange was \$1.54 to the £? (Give your answer to the nearest penny.) [3]

- 6 (a) A wholesaler allows 15% trade discount to the retailers she supplies plus $2\frac{1}{2}\%$ cash discount for settlement within 7 days.

Calculate the amount paid by a retailer for goods priced at £2960 if payment was made within 7 days. [6]

- (b) A retailer's turnover for a year was £385 600 on the sale of goods purchased for £210 000.

The retailer's overheads for the year were salaries £31 400, heating and lighting £2750, advertising £5000 and sundries £1640.

Calculate the retailer's net profit for the year as a percentage of turnover. [6]

- 7 The table shows the numbers of new cars sold per month by a car dealer in the first eleven months of the year.

month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov
number of cars	6	5	19	14	10	13	10	22	12	11	10

- (a) Construct a bar chart to show this information. [4]
- (b) State
- (i) the mode, [1]
- (ii) the median for the eleven months. [2]
- (c) Calculate the number of cars that the car dealer needs to sell in December to achieve a monthly average (mean) sales figure of 13 cars for the full year. [5]

Section II (24 marks)

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

- 8 (a) An investor bought 3250 shares in company A when the shares cost £1.61 per share. The broker charged 2% commission. Calculate the total cost to the investor of buying the shares. [5]

- (b) The investor received a dividend of 5.8p per share. He then sold the shares when they cost £2.04 per share and was again charged commission of 2% on the sale. Calculate the total gain made by the investor from buying and selling the shares. [7]

- 9 (a) A sum of £12 000 is invested for 4 years in a bond paying 6% per annum compound interest. Calculate the value of the bond at the end of the four years. [6]

- (b) A trader bought goods on credit and arranged the following repayments:

August 1	£260
August 15	£384
August 22	£256
August 31	£300

Calculate on what date a single payment of £1200 would be equitable. [6]

- 10 (a) A manufacturer of plastic door handles wishes to purchase a new machine. She can choose between Machine A which costs £4390 and will produce the handles for 9.8p each or Machine B which costs £3697 and will produce the handles for 10.02p each.

How many handles must be manufactured before Machine A has a cost advantage over Machine B? [5]

- (b) The manufacturer buys Machine B.

The production cost is 10.02p per handle.

The manufacturer adds 12.4p per handle to cover the cost of raw materials, labour, depreciation and overheads. Calculate the manufacturer's profit when a quarter of a million handles are made and sold at £316 per 1000. [7]

- 11 (a) An insurance company charges annual premiums for property and contents insurance as follows.

Buildings cover	£1.82 per £1000 insured
Contents cover	£4.16 per £1000 insured

Calculate the total annual premium to insure property valued at £143 000 and contents valued at £53 000. [6]

- (b) A second insurance company adjusts its premiums in line with the retail price index (RPI).

(i) In 1990, when the RPI was 108, property premiums cost £1.62 per £1000.

Calculate the property premium in 1998 when the RPI was 136. [3]

(ii) Calculate the 1999 RPI if property premiums in 1999 cost £2.43 per £1000. [3]

