CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER			

COMMERCIAL STUDIES **7101/02**

Paper 2 Arithmetic **October/November 2011**

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

This document consists of **16** printed pages.

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International Examinations

[Turn over

2

Section A   (76 marks)

Answer **all** questions in this section.

1 **(a)** Calculate $\frac{3}{4}$ of 58.6 + 52 ÷ $\frac{2}{3}$

Answer (a) .... [3]

(b) Write $\frac{5}{8}$ as a

   (i) decimal,

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

   (ii) percentage.

Answer (b)(ii) ....% [1]

(c) How many 320 millilitre cups can be completely filled from a bottle containing 5 litres of water?

Answer (c) .... [3]

2 **(a)** The price of bananas in a store is 59 cents per kg.

(i) Calculate the total cost of 2.35 kg of bananas.

Give your answer in dollars ($) correct to 2 decimal places.

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

(ii) Due to a reduction in fuel costs for transportation, the price of bananas in the store decreases by 4.3%.

Calculate the new cost per kg.
Give your answer correct to the nearest cent.

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

(b) Shares in a banana company fall by 29.2% to $14.82.

Calculate the value of the shares before the fall.

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

3 **(a)** Calculate the annual rate of **simple** interest if an investment of £4200 for 2 years earns £294 interest.

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

(b) A company manufactures washing machines. The company increases the selling price of the washing machines each year in line with the Retail Price Index (RPI).
In 2004 the RPI was 125 and the company sold each washing machine for £350.

(i) In 2008 the RPI was 148.

Calculate the selling price of each washing machine in 2008.

Answer (b)(i) £ .... [3]

(ii) In 2010 the price of the washing machine was £490.

Calculate the RPI in 2010.

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

4 Adam, Jason and Omar make the following investments in their new business.

Adam	$124 000
Jason	$248 000
Omar	$93 000

(a) They agree to share the profits in the same ratio as their investments.

(i) Calculate the ratio of their investments.
Write your answer in its simplest form.

Answer (a)(i) .... [2]

(ii) In 2008 the total profits amounted to $71 430.

Calculate Jason's share of the profits in 2008.

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

(iii) In 2009 Jason received $41 028 as his share of the profits.

Calculate Omar's share of the profits in 2009.

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

(b) At the beginning of the year 2010 Adam purchased a new company car for $21 500.
The car depreciated in value by 18% in its first year.

Calculate the value of the car after one year.

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

5 **(a)** A wholesaler buys mobile phones from the manufacturer on credit as follows:

April 28	$5000
May 9	$12000
May 19	$8000
May 22	$5000

Calculate the date on which a **single** payment would be equitable.

Answer (a) .... [6]

(b) A wholesaler offers retailers trade discount of 14% on purchases valued at more than $15000 and cash discount of 1.2% for prompt payment.

Calculate how much a retailer must pay for 400 mobile phones at $60 each when paying promptly.

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

6 (a) The premiums charged by an insurance company for buildings and contents insurance are shown as follows:

Buildings	$36.15 per $20 000 insured
Contents	$51.25 per $5000 insured

A discount of 5% is offered to customers who arrange their insurance online.

Calculate the total cost to insure buildings valued at $540 000 and contents valued at $25 000 if the insurance is arranged online.

Answer (a) $ .... [8]

(b) A UK company purchased £3.8 million worth of dollars when the exchange rate was $1.82 = £1. Two weeks later the company changed all the dollars into pounds when the exchange rate was $1.75 = £1.
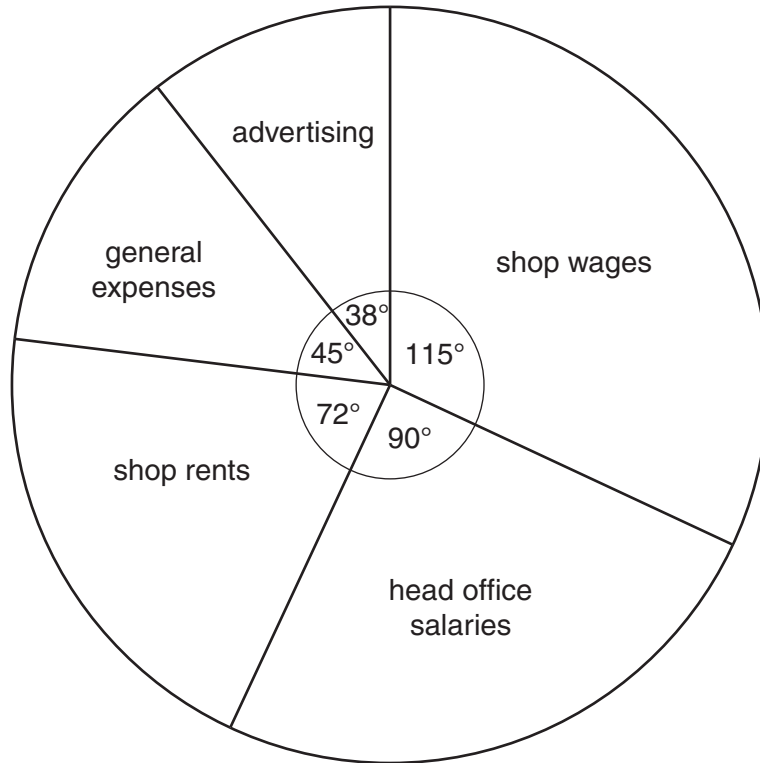
Calculate the profit in pounds (£) made by the company.

Answer (b) £ .... [6]

 [Turn over

7 In 2010 the overheads paid by a large retail company **totalled** $54 000 000.

The pie chart below shows how this money was distributed.

COMPANY OVERHEADS 2010
($54 000 000)

(a) Use the information in the pie chart to complete the following table:

COMPANY OVERHEADS 2010
($54 000 000)

shop wages	head office salaries	shop rents	general expenses	advertising
....	$13 500 000	....	....	....

[4]

(b) In 2010 the annual turnover was $114 680 000 on purchases of $47 000 000.
The overheads totalled $54 000 000.

   (i) Calculate the company's gross profit.

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

   (ii) Calculate the company's net profit as a percentage of turnover.

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

(c) The net profit is taxed at 14 cents in the dollar.

   Calculate the tax paid.

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

10

Section B (24 marks)

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

For Examiner's Use

8 A bank is open 5 days a week.
The opening hours of the bank are shown in the table below.

Monday to Thursday	0910 – 1550
Friday	0910 – 1430

(a) Calculate the number of hours the bank is open each week.

Answer (a) .... hours [4]

(b) A part-time employee at the bank works 22 hours each week and is paid £12.80 per hour.

Calculate the amount of money this employee will earn each week.

Answer (b) £ .... [2]

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(c) The manager of the bank is considering increasing the opening hours by opening on Saturday mornings from 0915 to 1200 hours.

(i) Calculate the percentage increase in opening hours.
Give your answer correct to one decimal place.

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

(ii) The hourly rate of £12.80 is increased by 5% for working on Saturday.

Calculate the hourly rate a part-time employee will be paid for working Saturday morning.

Answer (c)(ii) £ .... [2]

                             [Turn over

9 (a) The table shows the annual **compound** interest rates offered by six different savings accounts – A, B, C, D, E and F.

A	B	C	D	E	F
4.12%	4.15%	4.52%	4.61%	4.37%	4.15%

(i) Write down the modal interest rate.

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

(ii) Calculate the median interest rate.

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

(iii) A new savings account offers to pay the mean of the three highest savings rates in the table above.

Calculate the interest rate for the new savings account.

Answer (a)(iii) .... % [4]

(b) $5600 is invested for 3 years in an account that pays 4.53% **compound** interest per year.

Calculate the value of the investment at the end of the 3 years.
Give your answer to the nearest dollar.

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

10 A tourist wants to hire a car. She is offered the following two options:

Option A: £120   plus   8 pence per mile travelled

Option B: £80   plus   5 pence per mile for the first 200 miles travelled
                                       then 35 pence per mile for each extra mile travelled

(a) Complete the following table to show the cost of hiring the car for Option B.

Number of miles	0	100	200	300	400	500
Cost for Option A (£)	120	128	136	144	152	160
Cost for Option B (£)	....	....	90	....	....	....

[4]

(b) (i) Use the information in the table from part (a) to complete the graph, showing the cost of Option B.

CAR HIRE COSTS
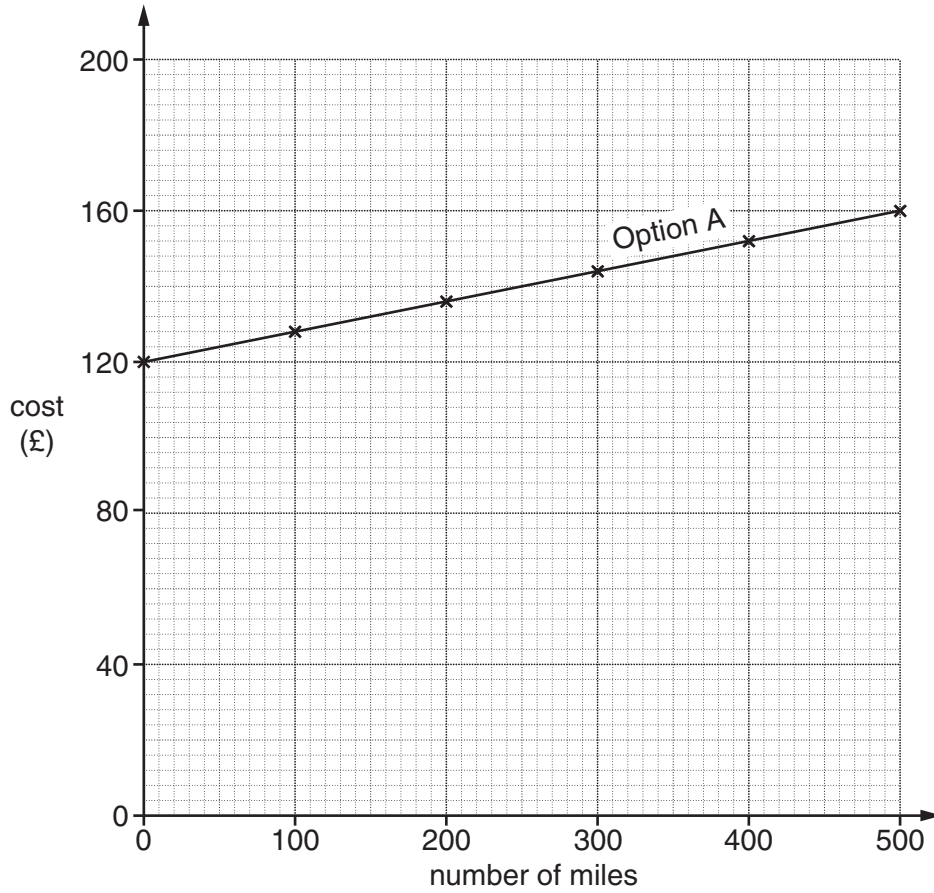
[4]

(ii) Which is the cheaper option when travelling 320 miles?

Answer (b)(ii) Option .... [1]

(c) Calculate the smallest number of miles the tourist must travel to make Option A the cheaper option.

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

11 On 1 January 2010 an investor bought 6500 shares in a transport company. The share price was £1.28 per share. The broker made a commission charge of 1.3%.

(a) Calculate the total cost of the investment.

Answer (a) £ .... [4]

(b) The company declared a dividend of 4.2 pence per share.

Calculate the investor's income from the investment.

Answer (b) £ .... [2]

(c) By 1 January 2011, the share price had risen to £1.36 per share.

Calculate the increase in share price as a percentage of the value on 1 January 2010.

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

(d) The investor decides to sell 4800 of his shares in the transport company.
The investor receives £6209.28 when selling the shares after paying a 2% commission charge on the sale.

Calculate the price per share at which the shares were sold.

Answer (d) £ .... [3]