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**COMMERCIAL STUDIES**

**7101/21**

Paper 2 Arithmetic

**October/November 2017**

MARK SCHEME

Maximum Mark: 100

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**Published**

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## Section A

Question	Answer	Marks	Guidance
1(a)	13.1	2	M1 4.625 seen
1(b)	892.68	2	M1 $860 \times 103.8 / 100$
1(c)	$\frac{2}{15}$	2	M1 $\frac{2}{3}$ seen

Question	Answer	Marks	Guidance
2(a)	9945.2(0)	4	M1 $9200 \times 2.7 \times 3 / 100$ A1 745.20 M1 + 9200
2(b)	4	4	M1 $93.75 - 90 (= 3.75)$ M1 '3.75' $\div 93.75$ M1 $\times 100$
2(c)	184	3	M1 $920 / 860 (=1.0697..)$ M1 $\times 172$

Question	Answer	Marks	Guidance
3(a)	321	6	M1 $100 \times 210$ M1 + 400 M1 $1500 / 100$ M1 $\times 15$ M1 $\div 1000$
3(b)	136.96	5	M1 $2 / 100$ M1 $214 \times '0.02'$ M1 $320 / 10$ M1 $\times 32$

Question	Answer	Marks	Guidance
4(a)	0.42 (million) oe	4	M1 $10 + 6 + 3$ M1 $1.33 \div '19'$ M1 $\times 6$
4(b)	33.25 (million) oe	3	M1 $1.33 \div 4$ M1 $\times 100$
4(c)	1.37 (million) oe	3	M1 $1.33 \times 1.03$ oe A1 1.3699 B1ft their value rounded correctly to 3sf

Question	Answer	Marks	Guidance
5(a)	11.5(10...)	4	B1 0.32 seen M1 '0.32' $\div 2.78$ M1 $\times 100$
5(b)	238	5	B1 1.84 seen M1 $\times 360$ M1 $\div 2.78$ A1 238.2 (73...) B1ft their value rounded correctly to nearest unit

Question	Answer	Marks	Guidance
6	2950.46	6	<p><b>M4</b> <math>20\,000 \times \left(1 + \frac{3.5}{100}\right)^4 (= 22\,950.46\dots)</math>  www  <b>or</b>  <b>M1</b> <math>20\,000 \times 1.035 (= 20\,700)</math>  <b>M1</b> <math>20\,700 \times 1.035 (= 21\,424.5)</math>  <b>M1</b> <math>'21\,424.5' \times '1.035' (= 22\,174.35\dots)</math>  <b>M1</b> <math>'22\,174.35' \times '1.035' (= 22\,950.46\dots)</math></p> <p><b>and M1</b> – 20 000</p>

Question	Answer	Marks	Guidance
7(a)	30.9(28)	2	<b>M1</b> $386.6 \div 12.5$
7(b)	4794	3	<b>M1</b> $3000 - 650 (= 2350)$ <b>M1</b> $'2350' \times 2.04$
7(c)	937.5(0)	2	<b>M1</b> $1920 \div 2.048$

Question	Answer	Marks	Guidance
8(a)	1583.4(0)	4	<p><b>M1</b> <math>1300 \times 1.20 (= 1560)</math>  <b>M1</b> <math>'1560' \times 1.5 / 100 (= 23.4)</math>  <b>M1</b> <math>'23.4' + '1560'</math></p>
8(b)	36.42	5	<p><b>M1</b> <math>2160 - 8(a)</math> <b>M1</b> <math>\div 8(a)</math> <b>M1</b> <math>\times 100</math>  <b>A1</b> <math>36.415(3\dots)</math>  <b>B1ft their</b> value rounded correctly to 2dp</p>

Question	Answer	Marks	Guidance
9(a)	Estima	1	
9(b)	23.98	6	<p><b>M1</b> <math>\times f</math> <b>M1</b> <math>\Sigma xf (1175)</math> <b>M1</b> <math>\Sigma f (49)</math>  <b>M1</b> <math>\Sigma xf \div \Sigma f</math>  <b>A1</b> <math>23.979(\dots)</math>  <b>B1ft their</b> value rounded correctly to nearest penny</p>

## Section B

Question	Answer	Marks	Guidance
10(a)	10½	1	
10(b)	9	1	
10(c)	8	1	
10(d)	50	1	<b>10(a) + 10(b) + 10(c) + 22.5</b>
10(e)	188.6	5	<b>M1</b> $8 \times 18.4 (= 147.2)$ <b>M1</b> $18.40 \times 1\frac{1}{2} (= 27.6)$ <b>M1</b> $'27.6' \times 1\frac{1}{2} (= 41.4)$ <b>M1</b> $'147.2' + '41.4'$
10(f)	124.2(0)	2	<b>M1</b> $4\frac{1}{2} \times '27.6'$
10(g)	1012 cao	1	

Question	Answer	Marks	Guidance
11(a)	25 200	8	<b>M1</b> $150\,000 - 45\,000$ <b>M1</b> $'105\,000' \times 0.825$ <b>M1</b> $'86\,625' \times 0.8$ <b>A1</b> 69 300 <b>M1</b> $\Sigma$ investments <b>M1</b> $\frac{32}{88}$ oe <b>M1</b> $\times '69300'$
11(b)	1650	4	<b>M1</b> ordering <b>M1</b> selecting 1500 and 1800 <b>M1</b> $(1500 + 1800) / 2$

Question	Answer	Marks	Guidance
12(a)	540	1	
12(b)	2010	1	
12(c)	2008 to 2009	1	
12(d)	0.68 or 68 cents	2	<b>M1</b> $680 \div 1000$
12(e)	240	3	<b>M1</b> $261 \div 1.0875$ <b>M1</b> $\times 100$
12(f)	620	4	<b>B1</b> 1220 <b>B1</b> 600 <b>M1</b> $1220 - 600$

Question	Answer	Marks	Guidance
13(a)	320 000	4	<b>M1</b> $\frac{1}{3} \times 48\,000$ <b>M1</b> $16\,000 \div 5$ <b>M1</b> $\times 100$
13(b)	7400	8	<b>M1</b> $51\,000 - 11\,000 (= 40\,000)$ <b>M1</b> $5000 \times (8 / 100)$ <b>A1</b> 400 <b>M1</b> '40 000' $- 5000 (= 35\,000)$ <b>M1</b> '35 000' $\times (20 / 100)$ <b>A1</b> 7000 <b>M1</b> '7000' $+ '400'$