Cambridge
O Level

Cambridge International Examinations
Cambridge Ordinary Level

COMMERCIAL STUDIES **7101/22**

Paper 2 Arithmetic **October/November 2016**

MARK SCHEME

Maximum Mark: 1000

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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Section A

1	**(a)**	$38\frac{7}{216}$ cao	2	**M1** $\frac{16430}{432}$ oe or 38.03(2..) or $\frac{1885}{54}$ or $34\frac{49}{54}$ or 34.9(0..) seen
	(b)	0.032	2	**M1** 0.0317.....
	(c)	34.**70** cao	2	**B1** 34.699(0.....)
2		$1524.90	3	**M1** 13 800 × 13 (=179 400) **M1** × 0.85 or **M1** 13 800 × 0.13 (=1794) **M1** × 0.85 If **M2** not scored then **B1**ft ÷ 100
3	**(a)**	1044.58	5	**M1** 19 000 × 1.018 (=19342) **M1** 19342 × 1.018 (=19 690) **M1** 19690 × 1.018 (=20044) (or **M3** 19 000 × 1.018^3) **M1** "20 044.57" – 19000
	(b)	204.60	5	**M2** (8 000 x 5.69 x 4) /100 (=1820.8) -1 eeo **M1** 8 000 + *their* 1820.8 dep **M1** ÷ 48
4	**(a)**	63	4	**M1** 6 × 24 + 4 **M1** 9 289 ÷ *their* 148 **A1** 62.76 or 62.8 **B1** for rounding their non-integer answer to nearest whole number
	(b)	20 03	2	**M1** 13.50 + 6.13 Allow 8.03 pm but not (0)803 or 8.03 am.
	(c)	40	3	**M2** $8 \times 10^5 \div 20$ followed by ÷ 1000 or **M1** ÷ 1000 or **M1** $8 \times 10^5 \div 1\,000$ **M1** ÷ 20 or **M1** 20 × 1000 **M1** 800000 ÷ "20000"
5	**(a)**	1.2696×10^{10} oe	2	**M1** 1.38 (x 10^{10}) × 0.92 oe Allow 1.27×10^{10}
	(b)	3.26×10^7 art oe	2	**M1** $2.9 \times 10^7 \div 0.89$
6	**(a)**	236360	2	**M1** 2 000 × 118.18
	(b)	49.5 oe	3	**B1** 8 hrs 15 mins oe **M1** "8h 15m" × 6 NOT 49.3(0)
	(c)	500	2	**M1** 60 000 ÷ 120
7		20 www	6	**M1** 36 x 14.30 **A1** 514.80 **M1** 614.80 – "514.80" **A1** 100 **M1** their 100 ÷ 5 **M1** 41 x 14.3 **A1** 586.30 **M1** 614.80 – "586.30" **M1** "28.50" / 5 (=5.70) **M1** "14.30" + "5.70"

8	**(a)**	28687.50	4	**M1** 3.75/100 × 85000 **A1** 3187.5 **M1** *their* 3187.5 + 25500
	(b)	176000	3	**M2** (6600 × 100)/3.75 or **M1** 6600 ÷ 3.75
9	**(a)**	60	1	
	(b)	410	1	Allow 408 to 412
	(c)	13	3	**M1** (500 – 60) / (3400 – 0) oe **M1** k × 100 0 < k < 1 must be an interval, not a point for first M1 Allow art 12.9 or 13
10	**(a)**	5160	3	**M1** 400 x 12 (=4800) **M1** + 360
	(b)	412.50	3	**M1** k × 198/192 any k **M1** k = 400
	(c)	613.40	6	**M2** 80 000 x 0.007 (or 0.7/100 or 0.7%) or **M1** 80 000×0.7 **M1** 12 × 3.20 **A1** 38.40 **M1** "560" + "38.40" + 15
11	**(a)**	15.15	1	
	(b)	36.20	3	**M1** 30(.00) **M1** + 4 × 1.55
	(c)	22.50	3	**M1** 14.50 **M1** +8

Section B

12 (a)	15	4	**M1** 1 + 2 + 3 (=6) **M1** 45/6 (=7.5) **M1** 7.5 × 2
(b) (i)	56.50	3	**M2** values / 6 or **M1** values (=339)
(ii)	54	1	
(iii)	55 www	4	**M3** (54 + 56)/2 or **M2** 54 & 56 indicated or **M1** Ordered list (52, 54, 54. 56, 58, 65)
13 (a)	97.2	3	**M1** 0.27 **M1** x 360
(b)	9.75×10^7 oe	3	**M1** 54 ÷ 360 **M1** × 6.5×10^8
(c)	27 000 000	3	**M1** $6.5 \times 10^8 \times (50/100)$ **M1** ÷ 12 (27083 333) If 0 or 1 scored then **B1** for correctly rounding > 2sf answer to 2 sf
(d)	2/25	3	**M1** 28.8/360 **M1** 0.08 or 8/100 or 4/50 or **M1** (54/360) x 100 = 15 **M1** 50 – 27 – 15
14 (a)	900	4	**M2** 5 correct values (200, 192, 185, 171, 152) or **M1** for 4 correct values **M1** adding their 5 values
(b)	24	3	**M1** 200 – *their* 152 (=48) **M1** ("48"/200) × 100
(c)	12 258 cao	3	**M2** ("152" × 1000) ÷ 12.4 or **M1** "152" × 1000 or figs "152" ÷ 12.4 If **M0,1** then **B1** for rounding their ans to nearest unit
(d)	2375	2	**M1** "152" × 100 ÷ 6.4
15 (a)	432	4	**M1** 4 500 × 0.08 **M1** × 1.50 **M1** × 0.8
(b)	8.88	8	**M1** 2 100 × 9.15 (=19 215) Sale value **M1** 19 215 – 150 (=19 065) Less commission **M1** 2 100 × 8.22 (=17 262) Purchase price **M1** 19 065 – 17262 (1 803) Profit **M1** 1 803 × 0.85 (= 1 532.55) After tax **M1** 1 532.55 ÷ 17 262 % profit **M1** ×100 (=8.87 817…) **B1** ft correct to 2dp