UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 question paper for the guidance of teachers

0580 MATHEMATICS

0580/11

Paper 1 (Core), maximum raw mark 56

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 must be read in conjunction with the question papers and the report on the examination.

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Abbreviations

cao correct answer only cso correct solution only

dep dependent

ft follow through after error isw ignore subsequent working

oe or equivalent SC Special Case

www without wrong working

Qu.	Answers	Mark	Part Marks
1	847	1	
2	(a) 20 376	1	
	(b) 20 400	1ft	Their (a) to nearest 100
3	(a) 3	1cao	
	(b) 3	1	
4	(a) Trapezium	1	Do not allow Trapezoid
	(b) Parallelogram	1	
5	100	2	M1 for $\frac{600}{5+1}$ (×1)
			If zero, SC1 for answer of 500
6	124 or 123.8	2	M1 for $\pi \times 6.28^2$
	or 123.83 to 123.92		2.7×20000
7	0.54	2	M1 for $\frac{2.7 \times 20000}{100000}$ oe
			or SC1 for figs 54 in answer
8	(a) 10	1	
	(b) 9	1	
9	22.5 oe	3	B2 for $180 = 5x + 2x + x$ oe or better B1 for $2x$ or $6x$ marked in the correct place on
10	x = 13	3	the diagram M1 for consistent multiplication and
10	y = -9		addition/subtraction.
			A1 for $x = 13$ or A1 for $y = -9$
11	$\frac{26}{12} - \frac{7}{12}$ or $2 - \frac{5}{12}$ oe	M2	M1 for $\frac{13}{6} - \frac{7}{12}$ or $2\frac{2}{12} - \frac{7}{12}$ or $\frac{1}{6} - \frac{7}{12}$ oe
	$1\frac{7}{}$ or $\frac{19}{}$ oe	A1	
10	12 12		
12	(a) 1738.3	1	
	(b) 2.87×10^4	1	
	(c) 6.5	1	

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		T	
13	3245	3	M1 for 3000×1.04^2
			A1 for 3244.8
			If zero, SC2 for answer of 245
			If zero, SC1 for their answer corrected to
			nearest dollar
1.4	() (0)0()01()	-	
14	(a) (0)8(.)01(am)	1	Not 8.01 pm
	(b) 78.4 or 78.38 to 78.39	3	M2 for 827 ÷ 10.55
			or M1 for figs 827 ÷ their time
15	(a) (i) 9	1	
	(ii) 15 03, 3.03pm	1	
	(ii) 13 03, 3.03piii	_	
	(b) (i) 7 on 7	1	
	(b) (i) 7 or -7		
	(ii) 17	1	
16	(a) 84°	1	Check diagram
	(b) 10	1	
	(c) 60	1ft	ft their (b) \times 6 where (b) is an integer
	96 16		16
	(d) $\frac{96}{360}$ or $\frac{16}{60}$	1ft	ft $\frac{16}{\text{their}(\mathbf{c})}$ oe where (c) is an integer
	360 60		their (c)
	(6)		
17	$\begin{vmatrix} \mathbf{a} \\ 2 \end{vmatrix}$	1	
	(b) C marked at (1, 2)	1	
	(4)		
	(c)	1	
	(-3)		
	$\left(-12\right)$	1	
	$\left \begin{array}{c c} (\mathbf{d}) & 12 \\ \end{array} \right $	1	
	4)	_	
18	(a) 66°	2	M1 for 90° clearly identified as A
	(b) 114°	1ft	180 – their (a)
			180 – their (b) their (a)
	(c) 33°	1ft	or —
	1		2 2
19	(a) (i) $x + 7$	1	
	(ii) 3 <i>x</i>	1	
	(b) (i) x +their (a)(i) +their (a)(ii) =32	1ft	ft dependent on 2 algebraic expressions in (a)
	or better		
	(ii) $(x =) 5$	2ft	M1 for $5x = 32 - 7$ oe
	() () -		ft their (b)(i) with M1 for $ax = b$
			and A1 if answer is an integer.
	(a) 12	1ft	
	(c) 12	111	ft their (b)(ii) substituted into their (a)(i)
			or their (b)(ii) + 7 evaluated correctly