UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2011 question paper for the guidance of teachers

0580 MATHEMATICS

0580/13

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.

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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	25	1	
2	(a) 105 002	1	
	(b) 110 000	1ft	
3	8x + 5y cao	2	B1 8x or 5y in final answer
4	(a) $7 \times (6-3) + 5$	1	
	(b) $8-6\times(4-1)$	1	
5	$\frac{11}{21}$, 52.4%, 0.525, $\frac{111}{211}$	2	M1 for conversion to decimals or %, allow 1 error 0.5238, 0.524, 0.525, 0.526 or B1 for 3 in correct order SC1 correct but reverse order
6	8	2	M1 for 240 or 0.3 seen or figs 24 ÷ figs 3
7	112	2	M1 for $240 \div (7+8) \times 7$
8	(a) 211 cao	1	
	(b) 216 cao	1	
9	(\$)138	2	M1 for 120 × 1.15 oe SC1 answer 18
10	(x =) -3 (y =) 5	2	M1 for correctly eliminating one variable
11	(x =) 3.5	2	M1 for $2x - 3 = 2 \times 2$ or better $\frac{2x}{2} = 2 + \frac{3}{2}$
12	(a) 1.28×10^5	1	
	(b) 128 500	1	
13	882	2	M1 800 × 1.05 × 1.05
14	$5h(g^2+2j)$	2	B1 for $5(g^2h + 2hj)$ or for $h(5g^2 + 10j)$
15	298.79 cao	2	M1 for 500 ÷ 1.6734
16	$20x^9$ cao	2	B1 for kx^9 or $20x^k$
17	130	2	M1 for $26 \times 500\ 000$ or 1 cm represents 5 km oe

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18	$\left[\frac{1}{9},\frac{1}{4}\right]$	M1	Both fractions seen
	(1, 1) 4 9 13	E 1	Both fractions over a common denominator and
	$\left(\frac{1}{9} + \frac{1}{4} = \right) \frac{4}{36} + \frac{9}{36} = \frac{13}{36}$		added to give $\frac{13}{36}$
			36
19	(a) 5 or -5	1	
	(b) $-0.714 (-0.7143 \text{ to } -0.7142) \text{ or } -\frac{5}{7}$	2	M1 for $-2 + 2 + 1 - 3 - 1 - 2$ and $\div 7$
20	44.4 (44.36 to 44.38)	3	M2 for $8 \times 8 - \pi \times 2.5^2$ or
		www	M1 for $\pi \times 2.5^2$
21	(a) (i) 70	1	
	(ii) 64	1	
	(b) Kite	1	
22	(a) 0.0299 or 0.02992	1	
	(b) 6.4×10^{13}	2	B1 for 64×10^{12} or $64\ 000\ 000\ 000\ 000$
23	(a) (i) B at $(5, -2)$	1	
	(ii) $\begin{pmatrix} 10 \\ -4 \end{pmatrix}$	1ft	
	(b) (-1, -4)	2ft	B1 , B1 follow through their <i>B</i> plotted
24	(a) (DB =) 9.75 or 9.746 to 9.747	3	M2 for $\sqrt{(12^2-7^2)}$ or
			M1 for $12^2 = 7^2 + x^2$ or better
	(b) (Angle $CAD = $) 32.6 or 32.57 to 32.58	2	M1 for sin $\frac{7}{13}$