UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0580 MATHEMATICS

0580/13

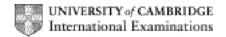
Paper 1 (Core), maximum raw mark 56

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 correct solution only cso

dep dependent

follow through after error ft ignore subsequent working or equivalent isw

oe Special Case SC

without wrong working www

Qu.	Answers	Mark	Part Marks
1	Pyramid	1	
2	1, 4, 25, 100	2	B1 for any two and none incorrect. -1 each incorrect
3	(a) 2	1	
	(b) 2	1	
4	(a) 41 or -41	1	
	(b) -7	1	
5	$2x^2 + xy$ final answer	2	B1 for $2x^2$ or xy seen in working
6	5.5	2	M1 for $2x + 1 = 3 \times 4$ or better or $\frac{2x}{3} = 4 - \frac{1}{3}$
7	6.489	2	B1 for 6.5 or 6.49 or 6.4891
8	35	2	M1 for $45 \div (7 + 2)$ SC1 for answer = 10
9	46.4	2	M1 for 32 × 1.45 oe or B1 for answer of 14.4
10	<u>3</u> 16	2	B1 for $\frac{1875}{10000}$ or any equivalent fraction.
11	3a(c-2d)	2	B1 for $a(3c - 6d)$ or $3(ac - 2ad)$ or $3a(jc - kd)$ where j and k are non-zero.
12	<u>8</u> <u>27</u>	2	M1 for $1 \div (1\frac{1}{2})^3$ oe or SC1 for $\frac{27}{8}$
13	(x =) 2, (y =) -1	2	M1 for correct method for eliminating one variable. Subtract or multiply by 3 and 5, then subtract

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14	(a) 17	1	
	(b) $\sqrt{17}$ or $4.12()$	1	
	(c) 0.294	1	
15	212.18 final answer cao	3	M2 for 200×1.03^2 oe or M1 for $(200 \times 1.03) \times 0.03$ oe
16	(a) 90	1	
	(b) 45	1ft	ft $\frac{1}{2}$ (180 – their (a))
	(c) 45	1ft	ft 90 – their (b)
17	(a) $(7+2) \times 9$	1	
	(b) $36 \div (6 \div 2) = 12$	1	
	(c) $5 \times (3+6) \times 2 = 90$	1	
18	(a) (i) $\begin{pmatrix} 4 \\ 5 \end{pmatrix}$	1	
	(ii) $\begin{pmatrix} 2 \\ -2 \end{pmatrix}$	1	
	(b) $(AC) + (CB) = (AB)$	1	
19	$(y =) -\frac{1}{3}x + 2$ cao	3	B1 for gradient of $\pm \frac{1}{3}$ oe
	3		(Allow ± 0.33 or better) B1 ind for $mx + 2$ where $m \neq 0$.
20	(a) (i) 4	1	
	(ii) $\frac{4}{5}$ oe	1	
	(iii) $\frac{2}{5}$ oe	1	
	(b) $\frac{2}{4}$ oe	1	
21	(Mode =) 0 (Median =) 2 (Mean =) 2.7	1 1 2	$\mathbf{M1} (0+0+0) + 1 + 2 + 2 + 4 + 4 + 5 + 9$

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22	(a) Lines connecting (08 00, home) to	3	
	(08 10, shop)		B1 home to shop
	(their 08 10, shop) to (their 08 15, shop)		B1 ft horizontal and 5 minute period
	(their 08 15, shop) to (08 30, school)		B1 ft for line to 08 30 and school
	(b) 1.65	2	M1 for use of speed × time SC1 for 1.375 or 1.376 to 1.38