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Mark Scheme (Results)
Summer 2008

IGCSE

IGCSE Mathematics (4400) Paper 1F

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Summer 2008 IGCSE Maths Mark Scheme – Paper 1F

Q	Working	Answer	Mark	Notes
1. (a)		7006	1	B1 cao
(b)		9000	1	B1 cao
(c)		hundreds	1	B1 Accept 500, 100
(d)		326	1	B1 cao
				Total 4 marks

2. (a)(i)		cuboid	1	B1 Accept rectangular box
(ii)		prism	1	B1 Condone omission of 'pentagonal'
(iii)		cone	1	B1
(b)		8	1	B1 cao
				Total 4 marks

3. (a)		Egypt and Malaysia	1	B1
(b)(i)		20	3	B1 cao
(ii)	$\frac{20}{100}$			M1 for $\frac{"20"}{100}$
		$\frac{1}{5}$		A1 ft from "20"
(c)		14	1	B1 Accept 13 or 14
(d)(i)		Kenya	2	B1
(ii)		0.43		B1 cao
(e)(i)		35 <bar<40	2	B1
(ii)		61		B1 cao
				Total 9 marks

4.	(a)			1	B1	
	(b)	$10 \times 2 + 1$		2	M1	
			21		A1	cao
	(c)	$\frac{37-1}{2}$		2	M1	
			18		A1	cao
	(d)	eg 60 is even, number of sticks is always odd, first number is odd and 2 is added each time, multiplying by 2 and adding 1 will always give an odd number of sticks		1	B1	May refer to number sequence of stick pattern – need not do both
	(e)		$n = 2p + 1$	3	B3	for $n = 2p + 1$ oe eg $n = p2 + 1$, $1 + p \times 2 = n$ B2 for $2p + 1$ oe B1 for n = linear function of p eg $n = p + 1$
						Total 9 marks

5.	(a)	25 − 18		2	M1	for 25 − 18, 18-25, 18 to 25 etc
			7		A1	cao
	(b)	18 19 21 22 23 24 24 25 or 22, 23 or $\frac{8}{2}$ or 4 or $\frac{9}{2}$ or 4½		2	M1	Also award for 18 19 21 22 23 24 25 i.e. with one 24 omitted
			22.5		A1	cao
						Total 4 marks

6. (a)		24	2	B2	B2 for 23-25 inc B1 for 22 or 26	
(b)	$6 \times 2 + (4.5 \pm 0.2) \times 2$ oe		2	M1	for $6 \times 2 + (4.5 \pm 0.2) \times 2$ oe	
		20.6-21.4		A1	for 20.6-21.4 inc *SC* if M0, award B1 for 20	
(c)		0	1	B1	Accept 'none', 'zero'	
(d)		2	1	B1	cao	
(e)(i)		115°-119°	2	B1		
(ii)		obtuse		B1		
(f)		4 , 3	2	B2	B1 for 4 B1 for 3	
					Total 10 marks	

7. (a)		$2p$	1	B1	Accept $p2$, $2 \times p$ etc	
(b)		$4xy$	1	B1	Accept $xy4$, $4 \times xy$ etc	
(c)		$9g - 5h$	2	B2	B1 for $9g$ B1 for $-5h$ or $+ -5h$	
					Total 4 marks	

8. (a)(i)		27	1	B1	cao	
(ii)		20	1	B1	cao	
(iii)		25	1	B1	cao	
(iv)		23	1	B1	cao	
(b)		$\frac{5}{9}$	2	M1	fraction with denominator of 9	or B2 for 0.55, 0.56, 55%, 56% or better but not for 0.6, 60% B1 for 5 in 9, 5 : 9
				A1	numerator of 5	5 out of 9
					Total 6 marks	

9. (a)		$\frac{8}{18}$, $\frac{12}{27}$ etc	1	B1	
(b)	65 ÷ 5 or 13 or 4 × 65 or 260		2	M1	
		52		A1	cao
(c)	0.875 0.9 0.85 0.88		2	M1	2 fractions converted to decimals or percentages or fractions with the same denominator
		$\frac{17}{20}$ $\frac{7}{8}$ $\frac{22}{25}$ $\frac{9}{10}$		A1	*SC* if M0, award B1 for 3 fractions in correct order
					Total 5 marks

10.	180 − 2 × 73 oe		3	M2	for 180 − 2 × 73 oe M1 for unmarked base angle identified as 73° or 146° seen
		34		A1	cao
					Total 3 marks

11. (a)(i)		6859	2	B1	cao
(ii)		6860		B1	cao
(b)	$\frac{17.28}{2.4}$		2	M1	for 17.28 or 2.4 or − 0.114... seen
		7.2		A1	for 7.2 oe inc $7\frac{1}{5}$ and $\frac{36}{5}$
					Total 4 marks

12.	2 arcs, radius 6 cm, centres *A* and *B*		2	M1	
	triangle within guidelines			A1	
					Total 2 marks

13. (a)	$\frac{4.8}{100} \times 23500$ or 1128		3	M1		or M2 for 23 500 × 1.048 oe	
	23 500 + "1128"			M1	(dep)		
		24 628		A1	cao		
(b)	29 832 − 28 250 or 1582		3	M1	Also award for 15.82	or	or
	$\frac{1582}{28250} \times 100$ or $\frac{1582}{29832} \times 100$			M1	for $\frac{1582}{28250}$ or $\frac{1582}{29832}$ or 0.056 or 0.053…	M1 for $\frac{29832}{28250}$ or 1.056 or 105.6 M1 for "1.056" − 1 or "105.6" − 100	M1 for $\frac{28250}{29832}$ or 0.9469... or 94.69... M1 for 1 − "0.9469" or 100 − "94.69"
		5.6		A1	cao (Do *NOT* award for 5.3)		
							Total 6 marks

14.	$\frac{1-0.6}{2}$		2	M1	for 1 − 0.6 or 0.4 or $\frac{x}{2}$ where $0 < x < 1$	
		0.2 oe		A1	for 0.2 oe	
						Total 2 marks

15. (a)	Enlargement scale factor 2 centre (1, 3)		3	B3	B1 for enlargement, enlarge etc B1 for 2, × 2, two, $\frac{2}{1}$, 1 : 2, 2 : 1 B1 for (1, 3) Condone omission of brackets but do not accept $\begin{pmatrix}1\\3\end{pmatrix}$	These marks are independent but award no marks if answer is not a single transformation
(b)	Reflection in the line $y = x$		2	B2	B1 for reflection, reflect etc B1 for $y = x$ oe inc eg 'in line from (2,2) to (5,5)', 'in dotted line shown'	
						Total 5 marks

16.	3 + 1 or 4 seen		2	M1	for 3 + 1 or 4 seen
		210		A1	for 210 cao
					Total 2 marks

17. (a)(i)		1, 9, 17	2	B1	cao	Brackets not necessary
(ii)	1, 5, 9, 13, 17, 25, 33			B1	cao (B0 if 1 or 9 or 17 repeated)	
(b)	eg No members in common. The intersection is empty. None of the members of *A* & *C* are the same. They don't have the same numbers. No numbers are in both *A* and *C*.		1	B1		
						Total 3 marks

18. (a)	$\frac{8\times 3}{2}$ oe		2	M1	for $\frac{8\times 3}{2}$ oe	
		12		A1	cao	
(b)	$\tan x^\circ = \frac{3}{8} = 0.375$		3	M1 A1	for tan for $\frac{3}{8}$ or 0.375	or M1 for sin following correct Pythagoras and A1 for 0.3511... or M1 for cos following correct Pythagoras and A1 for 0.9363...
		20.6		A1	for 20.6 or better (Accept 20.55604… rounded or truncated to 4 sig figs or more)	
						Total 5 marks

19. (a)	$7x - 7 = 5 - 2x$ $7x + 2x = 5 + 7$ or $9x = 12$		3	M1 M1	for $7x - 7$ seen for $7x + 2x = 5 + 7$ or $9x = 12$ or for $7x + 2x = 5 + 1$ or $9x = 6$ following $7x - 1 = 5 - 2x$
		$1\frac{1}{3}$ oe		A1	for $1\frac{1}{3}$ oe inc $\frac{4}{3}$, $\frac{12}{9}$, $1.\dot{3}$, 1.33
(b)(i)	$4x \leq 16$		4	M1	for $4x \leq 16$
		$x \leq 4$		A1	for $x \leq 4$
(ii)		1 2 3 4		B2	B1 for 3 correct and none wrong or for 4 correct and 1 wrong
					Total 7 marks

20. (i)		57.5	2	B1	Accept $57.4\dot{9}$, 57.499, 57.4999 etc
(ii)		56.5		B1	cao
					Total 2 marks

21.	$55 \times 7 + 65 \times 21 + 75 \times 15 + 85 \times 14 + 95 \times 3$ or $385 + 1365 + 1125 + 1190 + 285$ or 4350		4	M1 M1	for finding products $f \times x$ consistently within intervals (inc end points) and summing them (dep) for use of halfway values (55, 65, ...) or (55.5, 65.5, ...)
	$\frac{"4350"}{60}$			M1	for $\frac{"4350"}{60}$ (dep on 1st M1) for division by 60 or for $\frac{"4380"}{60}$ if 55.5, 65.5, ... used
		72.5		A1	for 72.5 Accept 73 if first two M marks awarded
					Total 4 marks