edexcel
advancing learning, changing lives

Mark Scheme (Results)
November 2010

IGCSE

IGCSE Mathematics (4400)
Paper 2F Foundation Tier

Edexcel Limited. Registered in England and Wales No. 4496750
Registered Office: One90 High Holborn, London WC1V 7BH

A PEARSON COMPANY

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information please call our Customer Services on + 44 1204 770 696, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Mark Scheme that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

Ask The Expert can be accessed online at the following link:

http://www.edexcel.com/Aboutus/contact-us/

November 2010

All the material in this publication is copyright
© Edexcel Ltd 2010

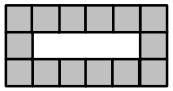
November 2010 IGCSE Mathematics (4400) Mark Scheme – Paper 2F

In all questions, the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.

Question		Working	Answer	Mark	Notes	
1.	a		4010	1	B1	
	b		8000	1	B1	
	c		tens	1	B1	Accept 10, 30
	di		1247	2	B1	
	dii		7412		B1	
	e	$\frac{639-457}{2}$ or 91 oe or $\frac{457+639}{2}$ oe		2	M1	
			548		A1	
						Total 7 marks

2.	a		30	1	B1	
	b		25-29	1	B1	Accept 25 $\leq$ ans $\leq$ 29 inc non-integer
	c		Green	1	B1	Accept any clear identification
	d		Red	1	B1	Accept any clear identification
	e	40 : 60, 4 : 6 oe		2	M1	Also award for 3 : 2
			2 : 3		A1	
						Total 6 marks

Question		Working	Answer	Mark		Notes
3.	ai		kilograms	3	B1	Accept kilos, kg
	aii		centimetres		B1	Accept cm
	aiii		litres		B1	Accept *l*
	b		50-160 mm or 5-16 cm	2	B2	for 50-160 mm or 5-16 cm B1 for mm or cm
						Total 5 marks

4.	a			1	B1	
	b	2 × 12 + 6		2	M1	
			30		A1	cao
	c	2*n* + 6 = 48 oe or ÷2 and −6 in either order		2	M1	
			21		A1	cao
						Total 5 marks

5.	a		tenths	1	B1	Accept $\frac{1}{10}$, 0.1, 3 tenths, $\frac{3}{10}$, 0.3
	b		7	1	B1	Accept 7.0, 7.00 etc
	c		90	1	B1	cao
	d	0.06 0.5 0.56 0.6 0.65		1	B1	cao
	e		$\frac{3}{100}$	1	B1	cao
						Total 5 marks

Question		Working	Answer	Mark		Notes
6.	a		$6k$	1	B1	Accept $6 \times k$, $k6$, $k \times 6$
	b		$7pq$	1	B1	for $7pq$, $pq7$ etc No × signs
	c		$4y^2$	1	B1	for $4y^2$, $4 \times y^2$, $y^2 \times 4$
						Total 3 marks

7.	ai		C E	4	B2	for 2 correct B1 for 2 correct & 1 wrong or for 1 correct and none wrong
	aii		B E		B2	for 2 correct B1 for 2 correct & 1 wrong or for 1 correct and none wrong
	b	3 lines of symmetry & rotational symmetry of order 3		2	B2	B1 for 'line' and '3' B1 for 'rotational' and '3'
						Total 6 marks

Question		Working	Answer	Mark		Notes
8.	a	$\frac{6}{2}$ oe or $\frac{6+1}{2}$ oe or $\frac{7+5}{2}$ oe or middle two numbers indicated eg by ringing or by arrow between them		2	M1	
			6		A1	
	bi		1	4	B1	Accept $\frac{6}{6}$, 100%, $\frac{1}{1}$
	bii		$\frac{1}{6}$		B1	Accept 2 or more dp rounded or truncated (0.16, 0.17 etc) Also accept 16%, 17% etc.
	biii		$\frac{3}{6}$		M1 A1	for denominator of 6 for numerator of 3 Accept $\frac{1}{2}$, 0.5, 50%
						Total 6 marks

9.	i		3481	4	B1	cao
	ii		37		B1	cao
	iii		17		B1	cao
	iv		243		B1	cao
						Total 4 marks

Question	Working	Answer	Mark		Notes
10.	3 × 4 × 0.8		3	M2	for 3 × 4 × 0.8 or for 30 × 40 × 8 M1 for 3 × 4 × number with 8 as only non-zero digit or for 30 × 40 × number with 8 a only non-zero digit or for number with digits 96
		9.6		A1	cao
					Total 3 marks

11.	a	Correct line at least from (−1, −1) to (5, 5)		1	B1	
	b	Correct line at least from (−1, −2) to (4, 8)		2	B2	B1 for two correct points plotted or stated eg in table
						Total 3 marks

12.	360 − (57 + 118 + 84) or 101		3	M1	
	180 − "101"			M1	
		79		A1	cao
					Total 3 marks

13.	a	$\frac{10.73}{5.3} + 1.4 = 2.0245... + 1.4$		2	M1	for 10.73 or 2.0245… or 1.6014…
			3.424528302		A1	for at least first 5 figures
	b		3.42	1	B1	ft from (a) if non-trivial
						Total 3 marks

Question	Working	Answer	Mark		Notes
14.	248 × 1.25 oe		3	M2	M1 for 248 × 1.15 or 285.2 or 248 × 75 or 18 600
		310		A1	cao
					Total 3 marks

15.	a		(7, 6)	2	B2	B1 for 7 B1 for 6
	b		*C* (3, 10) *D* (11, 2) or *C* (11, 2) *D* (3, 10)	2	B2	B1 for (3, 10) B1 for (11,2)
						Total 4 marks

16.	a	198 ÷ 0.72		2	M1	
			275		A1	cao
	b	50 × 0.72 × 221		2	M1	for × 0.72 or × 221
			7956		A1	cao
						Total 4 marks

17.	a	1 − (0.3 + 0.1)		2	M1	
			0.6		A1	cao
	b	0.1 + "0.6" or 1 − 0.3		2	M1	do not award if ans to (a) > 1
			0.7		A1	ft from (a) if ans to (b) < 1
	c	0.3 × 160		2	M1	for 0.3 × 160 or 0.3 × 200 or $\frac{48}{60}$
			48		A1	cao
						Total 6 marks

Question	Working	Answer	Mark		Notes		
18. a	$\frac{35}{100} \times 9840$ oe		2	M1			
		3444		A1	cao		
b	1350 − 1269 or 81		3	M1		or M1 for $\frac{1269}{1350}$ or 0.94 or 94 M1 for 1−"0.94" or 100−"94"	or M1 for $\frac{1350}{1269}$ or 1.06… or 106…. M1 for "1.06"−1 or "106"−100
	$\frac{81}{1350} \times 100$ or $\frac{81}{1269} \times 100$			M1	for $\frac{81}{1350}$ or $\frac{81}{1269}$ or 0.06 or 0.0638…		
					Award both method marks for an answer of 6.4, 6.38 or better.		
		6		A1	cao Do not award this mark if a denominator of 1269 used.		
							Total 5 marks

19. a	$\frac{2}{3} \times 2.6 \times 1.5^2$		2	M1	for correct substitution
		3.9		A1	cao
b	$35 = \frac{2}{3} \times h \times 2.5^2$ or $(h =) \frac{35}{\frac{2}{3} \times 2.5^2}$ oe		2	M1	for correct substitution or correct rearrangement
		8.4		A1	cao
					Total 4 marks

Question	Working	Answer	Mark		Notes
20. a		**Q** correct Vertices (6, 10) (9, 10) (6, 16)	3	B3	B2 for translation of correct shape or 2 correct vertices B1 for right-angled triangle with base 3 or height 6 in the same orientation as **P** (Condone omission of label if only one enlargement drawn)
b		**R** correct Vertices (5, 2) (5,3) (7,3)	2	B2	B1 for translation of correct shape or 2 correct vertices (Condone omission of label if only one congruent triangle drawn)
					Total 5 marks

21.	$\frac{19.6 \times 50000}{100 \times 1000}$		3	M1	for 19.6 × 50000 or 980 000 or number with digits 98 or $\frac{50000}{100 \times 1000}$ or ½ km
				M1	for completing calculation $\frac{"980000"}{100 \times 1000}$ or 19.6 × ½
		9.8		A1	cao
					Total 3 marks

22.		$x \geq 1$	3	B1	for $x \geq 1$ or $x > 1$ oe
		$y \geq 2$		B1	for $y \geq 2$ or $y > 2$ oe
		$x + y \leq 8$ oe		B1	for $x + y \leq 8$ or $x + y < 8$ oe
					SC B1 if all inequalities reversed
					Total 3 marks

Question	Working	Answer	Mark		Notes
23.	$\angle ACO = 21°$ or $\angle COB = 42°$ or $\angle ACB = 90°$		4	B1	Angles may be stated or marked on diagram
	$\angle OCP = 90°$ or $\angle CBP = 111°$ or $\angle BCP = 21°$			B1	
	180 − 21 − (90 + 21) or 180 − 42 − 90 or 180 − 21 − 111			M1	
		48		A1	Award 4 marks for an answer of 48, unless obtained by a clearly incorrect method.
					Total 4 marks

TOTAL FOR PAPER: 100 MARKS

Further copies of this publication are available from
International Regional Offices at www.edexcel.com/international

For more information on Edexcel qualifications, please visit www.edexcel.com
Alternatively, you can contact Customer Services at www.edexcel.com/ask or on + 44 1204 770 696

Edexcel Limited. Registered in England and Wales no.4496750
Registered Office: One90 High Holborn, London, WC1V 7BH