AQA

A S S E S S M E N T and
Q U A L I F I C A T I O N S
A L L I A N C E

General Certificate of Secondary Education

Mathematics 3302
Specification B

Module 3 Tier I 33003I

Mark Scheme

2007 examination - November series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

The following abbreviations are used on the mark scheme:

M   Method marks awarded for a correct method.

A   Accuracy marks awarded when following on from a correct method.
It is not necessary always to see the method. This can be implied.

B   Marks awarded independent of method.

M dep   A method mark which is dependent on a previous method mark being
awarded.

ft   Follow through marks. Marks awarded for correct working following a
mistake in an earlier step.

SC   Special Case. Marks awarded for a common misinterpretation which has
some mathematical worth.

oe   Or equivalent.

eeoo   Each error or omission.

MODULE 3   INTERMEDIATE TIER   33003I

1(a)	64 or 81	B1	
1(b)	11 or 13 or 17 or 19	B1	

2(a)	64	B1	
2(b)	500	B2	Sight of 0.008 oe B1

3	Attempts 8×29	M1	9×29
	232	A1	261
	259 – '232'	M1	their 261 – 259 (= 2) and 29 – their 2
	27	A1	27

4(a)	1.126582… or $\frac{89}{79}$	B1	or better
4(b)	1.127	B1 ft	ft if (a) given to at least 4 dp

5	60×1.65 or $100 \div 1.65$	M1	
	99 or 60.60…	A1	Allow 60.6, 60.60, 60.61, 60.606 or better
	100 – their 99 or their 60.60… – 60	M1 dep	May be implied
	England by €1 or by 60p/61p	A1 ft	Must have correct unit ft to nearest cent or penny rounded or truncated

6	0.39×800 (= 312)	M1	oe or sight of 0.61 or 61%
	800 – (their 312)	M1 dep	oe 800×0.61
	488	A1	

7	Any of 1, 2, 3, 4, 6, 9, 12, 18, 36 **and** 36 or 4 **and** 18 or 12 **and** 18 or 4 **and** 9 or 9 **and** 12	B2	A pair of factors of 36 which have a different LCM B1 eg 4 and 12, 6 and 6

8(a)	Actual increase is 1900 – 600	M1	$1.9 - 0.6$ $\frac{1900}{600} \times 100$
	their $\frac{1300}{600} \times 100$	M1 dep	their $\frac{1.3}{0.6} \times 100$ their 316.(6)-100
	216.(6…)	A1	Accept 217, 220
	200	B1 ft	ft any number $\geq$ 2 sf
8(b)	1.12×600	M1	672
	0.9×1300	M1	1170
	their 672 + their 1170	M1 dep	Dependent on both M1s
	1842	A1	SC3 2382

9	Largest = 82 000	B1	oe
	Smallest = 3×10^{-2}	B1	0.03 oe

10	Even $\times$ odd = even **or** odd $\times$ even = even	B1	
	Even $\times$ odd = even **and** odd $\times$ even = even	B1	SC1 at least two correct examples shown with clear evidence of $\times$

11(a) (i)	–6	B1	
11(a) (ii)	–12	B1	
11(a) (iii)	2	B1	
11(b)	$\frac{3}{20} \times 100$	M1	Accept $\frac{1}{20}$ = 5%
	15	A1	

12(a)	$\frac{6}{10}$	B2	oe fraction $\frac{4}{10}$ B1
	3×50 or 6×50	M1	Also allow 4×50 for M1 if $\frac{4}{10}$ above
	Men = 150	A1	
	Children = 300	A1	
12(b)	3 : 1	B1	oe eg $150 : 50$ or $\frac{3}{10} : \frac{1}{10}$

| 13 | Attempts to multiply numerators and denominators | M1 | |
| | $\frac{6}{55}$ | A1 | oe |

14(a)	1230	B1	
14(b)	$56\,088 \times 20$	M1	
	$1\,121\,760$	A1	

15(a)	$1\frac{2}{3} \times 2$	M1	$3\frac{1}{3}$ or $\frac{10}{3}$ or $2\frac{4}{3}$ oe Allow decimals ≥ 2 dp rounded or truncated $2 + 2 = 4$ or $2 \times 2 = 4$ M0A0
	4	A1	
15(b)	$1\frac{2}{3} + 1\frac{1}{4}$	M1	
	$(1)\frac{8}{12}$ $(+)$ $(1)\frac{3}{12}$	M1	oe Valid denominator, at least one correct numerator $(1).66$ $(+)$ $(1).25$
	$2\frac{11}{12}$ and some indication of yes	A1	2.91 or 2.92 and Yes oe

16(a)	$16 \,(\times)\, 9$	M1	Must have both
	144	A1	
16(b)	50	B1	

17	Sight of 399.5 or 400.5	B1	
	5 × their minimum	M1	5 × (300 – 399.99…)
	1997.5	A1	1.9975 without units implies B1M1

18(a)	7	B1	
18(b)	$\dfrac{1}{81}$	B1	

19	Round one number to 1 sf or 2 sf	M1	9 000 000 or 9 200 000 or 36 000 000 or 40 000 000 oe
	Correct division using same form	M1	
	3.6 - 4.5 inclusive	A1	