

Foundations of Advanced Mathematics (MEI)

INTERMEDIATE FSMQ 6989

Combined Mark Scheme And Report on the Unit

June 2005

6989/MS/R/05

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Foundations of Advanced Mathematics FSMQ (6989)

MARK SCHEME AND REPORT ON THE UNIT

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Mark Scheme and Report on the Unit June 2005

Foundations of Advanced Mathematics – 6989

Report

There were 584 entries for this session, slightly less than last year. The mean mark was 22, exactly the same as June 2004. The minimum mark scored by one candidate was 5 and the maximum of 40 was achieved by one candidate.

There were 18 questions for which at least one candidate offered no answer, rather more than usual, but these were scattered throughout the paper so this did not provide evidence that candidates found the paper too long or too hard.

In all questions at least one candidate offered each of the distracting answers.

In 4 questions the wrong answer was offered by more candidates than the right answer.

Q20 (3-D mensuration). In this question the answer offered by more than half the candidature was A, where a value for the volume was given. It may be that candidates were not sure about finding the area of the cross-section and did not check the other answers. In fact the correct answer of D (where you need to cube the linear scale factor to find the correct volume of a similar shape) was given by only 16% of the candidature.

Q21 (Mensuration of a circle). A little surprisingly, rather more were unable to calculate the total length of track correctly than those who were unable to manipulate surds, thus giving B as the false result rather than A. However, a significant number also gave D as the false result.

Q26 (Rearrangement of formulae). This is not a question that usually comes into this category. C is the rearrangement in which the most prevalent error occurs. It is the error that students would most commonly make, but equally when it is placed in front of them we would have expected them to spot it! A (very) small number also gave A as the false result.

Q30 (Coordinate geometry of a straight line). A, B and D were answers that attracted nearly equal responses. D may have been because the point given was not on the graph shown. A was a surprising response - although this is not a form of the equation of a straight line that would perhaps have been taught, substitution of the points of intersection with the axes should have given the result that this statement was true.

In a number of questions the correct answer was given by between 80% and 90% of the candidature; Q17 (Sale and discounted prices) was answered correctly by 90% (maybe the false result was too obviously false rather than candidates eliminating the correct responses!!) while Q4(Arithmetic) was answered correctly by 96%.

As in previous sessions I offer a summary of questions and topics with the approximate percentage of candidates giving the correct responses. As noted in previous reports, the giving of the correct response may not be because the candidate understands the question and can discern the errors being made in the distracting responses. Attempts are made not to offer distractors in such a way that the correct response is clearly different to the rest, but our perception of typical errors might result in that happening.

Mark Scheme and Report on the Unit taken in June

Question	Topic	
91 – 100%	4	Arithmetic
81 – 90%	5	Substitution into algebraic expressions
	17	Sale and discounted prices
	22	Probability
	24	Scale drawing
71 – 80%	6	Arithmetic calculation
	7	Calculations with standard form
	9	Linear sequence
	11	Conversion graph
	13	Algebra and brackets
	29	Simultaneous equations
	33	Mensuration of cuboid and Pythagoras
	36	Vectors
61-70%	14	Formula in words to be converted
	39	Statistics - cumulative frequency
	40	Statistics - interpretation of bar charts
51 –60%	2	Rounding of numbers
	12	Quadratic curve
	27	Trigonometry
41 – 50%	1	Solution of quadratic
	3	Algebra
	8	Indices
	10	Estimation
	16	Vectors
	18	Arithmetic and rates
	28	Trigonometry - cosine and sine rules
	35	Probability
	37	Algebraic simplification
	31 – 40%	19
23		Statistics - summary statistics of grouped data set
25		Cubic equations
26		Rearrangement of formulae
31		Solution of inequality
32		Area under curve
34		Intersection of lines on graph
38	Statistics	
21 – 30%	15	Estimation
	21	Mensuration of circle
	30	Coordinate geometry of straight line
11 – 20%	20	3-D mensuration

Mark Scheme and Report on the Unit taken in June

Answers

1	C	21	C
2	B	22	D
3	A	23	D
4	B	24	D
5	A	25	D
6	D	26	C
7	C	27	B
8	A	28	C
9	B	29	D
10	C	30	C
11	D	31	A
12	D	32	B
13	A	33	A
14	A	34	A
15	A	35	C
16	C	36	B
17	C	37	B
18	C	38	A
19	D	39	C
20	D	40	C

**FSMQ Intermediate Foundations of Advanced Mathematics(FAM)
June 2005 Assessment Session**

Unit Threshold Marks

Unit	Maximum Mark	A	B	C	D	E	U
6989	40	31	27	23	19	16	0

The cumulative percentage of candidates awarded each grade was as follows:

	A	B	C	D	E	U	Total Number of Candidates
6989	7.4	18.7	45.2	71.7	89.9	100.0	584

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