OCR
RECOGNISING ACHIEVEMENT

FSMQ

Foundations of Advanced Mathematics (MEI)

Free Standing Mathematics Qualification **6989**

Examiner's Report

June 2011

6989/R/11

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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Report, June, 2011

There were 2203 entries for this session, a significant increase from previous years. The mean mark was 23.3. The minimum mark scored by 1 candidate was 4 and 5 candidates scored the maximum mark of 40.

In all but 2 questions at least one candidate offered no answer (including question 1) and in some cases there were quite a number of such omissions. These were scattered throughout the paper so this did not provide any evidence that candidates found the paper too long.

In all questions each of the distracting answers was selected by at least one candidate.

In 6 questions the wrong response was selected by more candidates than the right response, and in 6 others fewer than 50% chose the correct response.

Q4 (Data display) More candidates thought that a cumulative frequency graph was the most appropriate diagram to display the data rather than a vertical line graph for this set of discrete data.

Q9 (Measurements of central tendency and spread) Taking the midinterval of 5.5 etc gives a mean of 28.75 which is correct. It may be that candidates took a midinterval value of 5, etc in deciding that this response was the incorrect one. However, the median is not the midinterval of the middle group. More candidates chose responses A and D than the correct response of B.

Q15 (Probability) Surprisingly for this standard question more candidates chose responses A and D then the correct response.

Q18 (Solution of quadratic equations) Response B was thought to have no real solutions. It may be that candidates thought that a "real solution" excluded 0.

Q32 (Probability) This is the second probability question, this time with no replacements, and, as with Q15, candidates are not comfortable with the possibilities. The most popular response for the correct answer was by assuming replacement (so the denominator was 10 × 10 and not 10 × 9) and also taking no account of the order of selection (so the numerator was 6 × 4 and not 6 × 4 × 2).

Q37 (Vectors) Both A and D were more popular responses than B. In both A and D the vector representing the wind was not 50 units, and in A North-East was confused with North-West.

As in previous sessions I offer a summary of questions and topics with the approximate percentage of candidates giving the correct responses.

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	Question	Topic
81 – 90%	1	Arithmetic
	3	Arithmetic – fractions
	5	Arithmetic – standard form
	12	Arithmetic – percentage profit and loss
	20	Algebra – substitution of values for letters
	28	Algebra – expression a formula in words
71 – 80%	2	Arithmetic – powers
	21	Algebra – exponential series
	36	Arithmetic – scale drawings
	38	Graphs – conversion graph
61 – 70%	6	Arithmetic – percentages
	7	Arithmetic – approximations
	8	Arithmetic – estimations
	10	Trigonometry – cosine rule
	13	Vectors
	17	Arithmetic – ratios
	25	Algebra – quadratic factorisation
	26	Algebra – simultaneous equations
	27	Trigonometry – sine rule
	34	Statistics – cumulative frequency curve
	35	Trigonometry – triginometrical ratios
	39	Statistics – frequency graphs
51 – 60%	11	Arithmetic – ratios
	22	Algebra – rearrangement of formulae
	29	Algebra – solution of linear equations
	31	Coordinate Geometry – graphical solution of simultaneous equations
	40	Arithmetic – scale drawing
41 – 50%	14	Arithmetic – percentages
	19	Algebra – simplification of expressions and terms
	23	Algebra – solution of inequality
	24	Algebra – expressing formula in words in algebraic form
31 – 40%	16	Coordinate geometry of the straight line
	30	Algebra – addition of algebraic fractions
	33	Graphs – speed-time graph
21 – 30%	4	Statistics – data display
	9	Statistics – measurements of central tendency and spread
	15	Probability
	18	Algebra – solution of quadratic equations
	32	Probability
	37	Vectors

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Answers

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

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