# FSMQ

# Foundations of Advanced Mathematics (MEI)

Unit **6989:** Multiple Choice

Free Standing Mathematics Qualification

# OCR Report to Centres June 2017

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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.

OCR will not enter into any discussion or correspondence in connection with this report.

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**OCR REPORT TO CENTRES**

# Foundations of Advanced Mathematics- 6989

The mean mark, at 29, was similar to the last two series. The lowest score was 10 marks and this series no candidate scored full marks, although 6 candidates scored 39. At least one candidate did not offer an answer in 4 questions, scattered throughout the paper; this number is well down on previous series.
Unusually, in 3 questions one of the distracting responses was not selected by any candidate.

In 3 questions the correct response was given by fewer than 50% of candidates though in all three questions this was the majority score.

**Q15 Algebra – linear inequalities**
Candidates had two inequalities to solve; both were quite tricky but 39% chose correctly that one given answer was incorrect while 38% decided that they were both incorrect.

**Q35 Graphs – area under curve**
In order to estimate the area under the curve the scales had to be considered. 48% chose the correct response with the others scattered over the remaining three options.

**Q39 Statistics – sampling**
Neither of the two examples of the selection of a sample gave a random sample; 37% only decided that this was so. 30% decided that while Toby's selection was not random, Alex's was.

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

| Percentage obtaining the correct response | Question | Topic |
|---|---|---|
| 91 - 100 | 2 | Arithmetic – evaluate expressions |
| | 4 | Arithmetic – ratio |
| | 7 | Arithmetic – indices |
| | 17 | Algebra – explain the content of an expression and substitute |
| | 21 | Algebra – simultaneous equations |
| | | |
| 81 - 90 | 5 | Arithmetic – percentages |
| | 6 | Arithmetic – equivalence |
| | 8 | Algebra – factorising quadratic expressions |
| | 12 | Algebra – solution of quadratic equations |
| | 20 | Algebra – solution of linear equations |
| | 29 | Statistics – displays |
| | 31 | Statistics – pie chart |
| | 38 | Graphs – conversion graph |
| | | |
| 71 – 80 | 1 | Arithmetic – vocabulary |
| | 9 | Arithmetic – appropriate units |
| | 13 | Algebra – substitute numbers and evaluate expressions |
| | 18 | Arithmetic – standard form |
| | 22 | Arithmetic – accumulating errors |
| | 24 | Trigonometry – ratios in right angled triangle |
| | 25 | Algebra – factorisation |
| | 28 | Vectors |
| | 34 | Vectors |

| | | |
|---|---|---|
| | 37 | Trigonometry – 3D problem |
| | 40 | Statistics – dependent probabilities |
| | | |
| 61 - 70 | 3 | Arithmetic – fractions |
| | 10 | Arithmetic – level of accuracy |
| | 16 | Algebra – algebraic fractions |
| | 19 | Algebra – rearranging formulae |
| | 23 | Algebra – formulate expression from description |
| | 26 | Trigonometry – sine and cosine rules |
| | 32 | Graphs – extracting information |
| | 33 | Graphs – straight line graphs |
| | | |
| 51 - 60 | 11 | Arithmetic – conversion of units |
| | 30 | Statistics – cumulative frequency |
| | 36 | Statistics – averages and spread |
| | | |
| 41 - 50 | 14 | Algebra – writing rule from description |
| | 27 | Statistics – probability |
| | | |
| 31 – 40 | 39 | Statistics – sampling |
| | 15 | Algebra – linear inequalities |

Answers.

| | |
|---|---|
| 1 | D |
| 2 | C |
| 3 | A |
| 4 | A |
| 5 | C |
| 6 | D |
| 7 | A |
| 8 | B |
| 9 | B |
| 10 | B |
| 11 | C |
| 12 | A |
| 13 | D |
| 14 | A |
| 15 | C |
| 16 | A |
| 17 | B |
| 18 | D |
| 19 | A |
| 20 | C |

| | |
|---|---|
| 21 | A |
| 22 | C |
| 23 | A |
| 24 | C |
| 25 | D |
| 26 | B |
| 27 | A |
| 28 | D |
| 29 | B |
| 30 | D |
| 31 | C |
| 32 | B |
| 33 | C |
| 34 | A |
| 35 | B |
| 36 | D |
| 37 | D |
| 38 | B |
| 39 | B |
| 40 | B |

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