

Examination Report

Part 2 Fellowship of the Royal College of Ophthalmologists (FRCOphth) written examination

December 2019

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# Summary

The written paper of this sitting of the Part 2 Fellowship in Ophthalmology (FRCOphth) examination was held in December 2019.

The reliability of this exam was 0.81, whilst the proportion of questions with a good item discrimination (>0.2) was 30 per cent. Two questions were removed from paper 1 and two questions were removed from paper 2; therefore the examination was marked out of 176.

The pass mark for the written examination is typically raised by 1 SEM above the mark identified by the Ebel method (108 marks; 61 per cent), which here would be to 113 marks or 64 per cent. However, as issues with on-screen delivery affected the exam, the pass mark was manually reduced to account for them, so as not to disadvantage the candidates sitting the Part 2 written exam this series. The final pass mark was set at 110/176 (i.e. 62 per cent of marks available). The pass rate for the examination was 70 per cent.

Six candidates obtained the Ebel mark (108; 61 per cent) but fell below the final pass mark (110; 62 per cent). The addition of (around half) the SEM has an impact on the pass rate, which would be 75 per cent rather than 70 per cent without the addition of the SEM.

# The candidates

There were 128 candidates for the examination. Of these 62/128 (48 per cent) were in Ophthalmic Specialist Training (OST). Of the OST candidates, the largest group (42 per cent) were in training level OST4.

# The written paper

The written part of the part 2 FRCOphth examination consists of a multiple-choice question paper, which is administered in two parts. Candidates must pass the written paper to be allowed to sit the clinical part of the examination.

As part of the quality management of the College's assessment process, the written papers are reviewed by the senior examiner after marking, but before the results are known. Four questions were removed from the examination papers as a result of this review.

The Part 2 FRCOphth subcommittee reviews all of the questions with a low item discrimination and facility.

1. The MCQ paper blueprint

| **Topic** | **Sub-Topic** | **Paper 1** | **Paper 2** | **Total** |
| --- | --- | --- | --- | --- |
| Clinical Ophthalmology | Trauma | 2 | 1 | 3 |
| Oculoplastic & Orbit | 5 | 5 | 10 |
| Glaucoma | 5 | 5 | 10 |
| Strabismus | 4 | 4 | 8 |
| Paediatrics | 4 | 4 | 8 |
| Retina | 10 | 10 | 20 |
| Cataract | 5 | 5 | 10 |
| Cornea & External Eye | 10 | 10 | 20 |
| Uveitis & Oncology | 6 | 5 | 11 |
| Neurology & Pupils | 8 | 8 | 16 |
| Medicine | 4 | 5 | 9 |
| Pharmacology & Therapeutics | Pharmacology & Therapeutics | 6 | 6 | 12 |
| Investigations | Ophthalmic | 5 | 4 | 9 |
| Orthoptic | 1 | 2 | 3 |
| Neuro-Imaging | 2 | 1 | 3 |
| Other | 0 | 1 | 1 |
| Miscellaneous | Statistics and epidemiology | 2 | 1 | 3 |
| Research and EBM | 1 | 2 | 3 |
| Nutrition | 1 | 0 | 1 |
| Ethics and driving | 2 | 2 | 4 |
| Standards and guidelines | 2 | 2 | 4 |
| Economics | 0 | 1 | 1 |
| Basic Science | Anatomy and physiology | 1 | 1 | 2 |
| Pathology and microbiology | 1 | 1 | 2 |
| Genetics | 1 | 1 | 2 |
| Optics | 0 | 1 | 1 |
| **Total** | **88\*** | **88\*** | **176** |
| \* Two questions were removed from the marking |

# Results

1. MCQ Statistics

| **Statistic** | **Value** | **Percentage** |
| --- | --- | --- |
| Mean score: | 117/176 | 66.5% |
| Median score:  | 118/176 | 67.0% |
| Standard deviation:  | 12.5 | 7.1% |
| Candidates:  | 128 |  |
| Reliability: | 0.8 |  |
| Standard error of measurement (SEM): | 5.49 | 3.1% |
| Range of marks: | 87 - 144 | 49.4% - 81.8% |
| Pass mark derived from standard setting:  | 108/176 | 61.4% |
| *Pass rate without addition of SEM:* | *96/128* | *75.0%* |
| Pass mark + 1 SEM: | 113/176 | 64.2% |
| **Manually adjusted final pass mark:** | **110/176** | **62.5%** |
| **Pass rate:**  | **90/128** | **70.3%** |
| ***Pass rate in OST:*** | ***52/62*** | ***83.9%*** |



1. Distribution of scores

## Analysis of questions

The Speedwell data provides analysis and identification of questions with low, moderate and high facility, and those which are good, poor or perverse (negative) discriminators. Ideally, all questions should have moderate facility and be good discriminators.

1. Discrimination against facility value

|  |  |
| --- | --- |
|  | **Facility Value** |
| **Discrimination** |  | Low (<25 correct) | Moderate (25-74 correct) | High (≥75 correct) | Total |
| Negative discrimination | 3 | 10 | 8 | 21 |
| Poor discrimination (0-0.19) | 8 | 50 | 45 | 103 |
| Good discrimination (0.2-1.0) | 0 | 31 | 21 | 52 |
| **Total** | **11** | **91** | **74** | **176** |

## Standard setting for multiple choice questions (MCQ) paper (Ebel method)

1. Classification of the questions

|  | **Difficult** | **Moderate** | **Easy** | **Total** |
| --- | --- | --- | --- | --- |
| **Essential** |  2 | 20 |  48 |  70 |
| **Important** |  6 | 17 |  55 |  78 |
| **Supplementary** |  5 | 11 |  12 |  28 |
| **Total** | **13** | **48** | **115** | **176** |

1. Expected percentage correct by borderline candidates

|  | **Difficult** | **Moderate** | **Easy** |
| --- | --- | --- | --- |
| **Essential** | 0.60 | 0.70 | 0.80 |
| **Important** | 0.50 | 0.55 | 0.60 |
| **Supplementary** | 0.25 | 0.30 | 0.30 |

1. Weighted score

|  | **Difficult** | **Moderate** | **Easy** | **Total** |
| --- | --- | --- | --- | --- |
| **Essential** | 1.20 | 14.00 | 38.40 |  53.60 |
| **Important** | 3.00 |  9.35 | 33.00 |  45.35 |
| **Supplementary** | 1.25 |  3.30 |  3.60 |  8.15 |
| **Total** | **5.45** | **26.65** | **75.00** | **107.10** |

|  |  |
| --- | --- |
| **SEM:** | **5.49** |
| **MCQ pass mark (Ebel + 1 SEM):** | **113** |
| **Manually adjusted final pass mark:** | **110** |

Due to technical issues in this sitting of the Written exam, the pass mark was manually lowered beyond the conventional Ebel + SEM. As the above shows, the pass mark was lowered from 113/176 to 110/176.

## Breakdown of written results

1. Breakdown of written results by training

| **Training** | **Failed** | **Passed** | **Pass rate (%)** | **Total** |
| --- | --- | --- | --- | --- |
| In OST | 10 | 52 | 83.9 | 62 |
| Not in OST | 25 | 38 | 60.3 | 63 |
| Unknown | 3 | 0 |  0.0 | 3 |
| **Total** | **38** | **90** | **70.3** | **128** |

1. Breakdown of written results by stage of training

| **Training** | **Failed** | **Passed** | **Pass rate (%)** | **Total** |
| --- | --- | --- | --- | --- |
| OST2 |  0 |  2 | 100.0 |  2 |
| OST3 |  0 |  5 | 100.0 |  5 |
| OST4 |  5 | 21 |  80.8 | 26 |
| OST5 |  2 | 14 |  87.5 | 16 |
| OST6 |  2 |  9 |  81.8 | 11 |
| OST7 |  1 |  1 |  50.0 |  2 |
| **Total** | **10** | **52** |  **83.9** | **62** |

1. Breakdown of results by deanery

| **Country** | **Deanery** | **Failed** | **Passed** | **Total** |
| --- | --- | --- | --- | --- |
| UK | East Midlands |  0 |  2 |  2 |
| East of England |  1 |  3 |  4 |
| East of Scotland |  0 |  1 |  1 |
| London and KSS (Kent, Surrey and Sussex) |  2 | 13 | 15 |
| Mersey |  1 |  4 |  5 |
| North of Scotland |  1 |  0 |  1 |
| North Western |  1 |  2 |  3 |
| Northern |  1 |  1 |  2 |
| Northern Ireland |  0 |  2 |  2 |
| Oxford |  0 |  2 |  2 |
| Peninsula (South West) |  0 |  1 |  1 |
| Severn |  0 |  2 |  2 |
| South East of Scotland |  0 |  1 |  1 |
| Wales |  1 |  2 |  3 |
| Wessex |  0 |  3 |  3 |
| West Midlands |  1 |  5 |  6 |
| West of Scotland |  1 |  2 |  3 |
| Yorkshire |  0 |  3 |  3 |
| Overseas | Europe and Overseas |  0 |  3 |  3 |
| **Total** | **10** | **52** | **62** |

## Comparison to previous years

1. Comparison with the written papers from previous examinations

| **Examination** | **Candidates** | **Pass mark** | **Pass rate** | **Pass rate in OST** |
| --- | --- | --- | --- | --- |
| Sep 2008 | 7 | 63.0% | 86.0% |  |
| Feb 2009 | 15 | 59.0% | 53.0% |  |
| Sep 2009 | 16 | 61.0% | 38.0% |  |
| Feb 2010 | 21 | 65.0% | 48.0% |  |
| Sep 2010 | 26 | 65.0% | 58.0% | 75.0% |
| Feb 2011 | 46 | 65.0% | 46.0% | 50.0% |
| Sep 2011 | 77 | 59.0% | 68.0% | 71.0% |
| Feb 2012 | 104 | 58.0% | 65.0% | 68.0% |
| Sep 2012 | 95 | 57.0% | 81.0% | 84.0% |
| Feb 2013\* | 109 | 61.0% | 85.0% | 89.0% |
| Sep 2013 | 103 | 59.0% | 93.0% | 97.0% |
| Feb 2014 | 117 | 58.0% | 90.0% | 94.0% |
| Sep 2014\*\* | 136 | 63.0% | 70.0% | 71.0% |
| Dec 2014\*\* | 106 | 65.0% | 47.0% | 54.0% |
| Jun 2015\*\* | 118 | 65.0% | 48.0% | 53.0% |
| Nov 2015\*\* | 145 | 64.0% | 41.0% | 46.0% |
| Jun 2016\*\* | 171 | 64.0% | 70.0% | 79.0% |
| Dec 2016\*\* | 143 | 64.0% | 77.0% | 83.0% |
| Jul 2018\*\* | 90 | 65.0% | 61.0% | 77.0% |
| Dec 2018\*\* | 127 | 65.0% | 58.0% | 59.0% |
| Jul 2019\*\* | 121 | 66.0% | 79.0% | 68.0% |
| Dec 2019\*\* | 128 | 62.0% | 70.0% | 84.0% |
| \* The written papers changed from MCQ and EMQ papers (90 questions on each) to a 180-question MCQ paper at this sitting\*\* The pass mark is now set at Ebel + 1 SEM |

1. Quality of questions compared to previous years

|  |  |  |  |
| --- | --- | --- | --- |
| **Exam** | **Facility** |  | **Discrimination** |
| **Low** | **Moderate** | **High** | **Negative** | **Poor** | **Good** |
| Feb 2013 | 4.4% | 53.3% | 42.2% |  | 8.3% | 53.3% | 38.3% |
| Sep 2013 | 3.9% | 46.6% | 49.4% | 6.7% | 55.1% | 38.2% |
| Feb 2014 | 3.9% | 54.4% | 41.7% | 8.9% | 56.7% | 34.4% |
| Sep 2014 | 2.8% | 59.8% | 37.4% | 5.6% | 59.8% | 34.6% |
| Jun 2015 | 5.0% | 54.2% | 40.8% | 9.5% | 42.5% | 48.0% |
| Nov 2015 | 3.9% | 59.6% | 36.5% | 9.6% | 57.3% | 33.1% |
| Jun 2016 | 3.9% | 50.0% | 46.1% | 6.7% | 56.1% | 37.2% |
| Nov 2016 | 4.0% | 54.2% | 41.8% | 6.2% | 54.2% | 39.5% |
| Jul 2018 | 2.2% | 53.9% | 43.8% | 9.6% | 50.0% | 40.4% |
| Dec 2018 | 5.1% | 50.3% | 44.6% | 10.2% | 57.1% | 32.8% |
| Jul 2019 | 1.7% | 55.2% | 43.1% | 12.6% | 58.6% | 28.7% |
| Dec 2019 | 6.2% | 51.7% | 42.0% | 11.9% | 58.5% | 29.5% |

1. Cumulative results by deanery (September 2010 to date)

| **Country** | **Deanery** | **Number of passes** | **Number of candidates** | **Pass Rate (%)** |
| --- | --- | --- | --- | --- |
| UK | East Midlands |  49 |  74 |  66.2 |
| East of England |  42 |  82 |  51.2 |
| East of Scotland |  2 |  2 | 100.0 |
| East Scotland |  9 |  10 |  90.0 |
| London and KSS (Kent, Surrey and Sussex) | 237 |  327 |  72.5 |
| Mersey |  48 |  77 |  62.3 |
| North of Scotland |  1 |  2 |  50.0 |
| North Scotland |  9 |  12 |  75.0 |
| North Western |  47 |  81 |  58.0 |
| Northern |  38 |  51 |  74.5 |
| Northern Ireland |  18 |  24 |  75.0 |
| Oxford |  35 |  48 |  72.9 |
| Peninsula (South West) |  19 |  33 |  57.6 |
| Severn |  35 |  46 |  76.1 |
| South East of Scotland |  1 |  1 | 100.0 |
| South East Scotland |  14 |  22 |  63.6 |
| Wales |  35 |  62 |  56.5 |
| Wessex |  27 |  45 |  60.0 |
| West Midlands |  64 |  101 |  63.4 |
| West of Scotland |  5 |  12 |  41.7 |
| West Scotland |  24 |  41 |  58.5 |
| Yorkshire |  62 |  107 |  57.9 |
| Overseas | Eire |  1 |  3 |  33.3 |
| Europe and Overseas |  25 |  35 |  71.4 |
| **Total** | **847** | **1298** |  **65.3** |