

Examination Report



The ROYAL COLLEGE of
OPHTHALMOLOGISTS

June 2015 Part 2 FRCOphth Written Examination

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Michael Nelson BSc (Hons) FRCOphth MAEd
Education Advisor

Public report on the Part 2 FRCOphth examination

The written paper of the 14th sitting of the Part 2 FRCOphth examination was held on Monday 22 June 2015.

Summary

This is the second of the de-coupled Part 2 written papers and the first to be taken in June. The reliability of the examination is high (KR 0.9) and meets GMC expectations. The quality of the paper is also high with almost 50% of questions with a 33% discrimination index greater than 0.250). One question was removed from the paper, which was therefore marked out of 179.

The pass mark for the written examination is now raised by 1 SEM above the mark identified by the standard set by the Ebel method. The pass rate for the examination remains relatively low at 57/118 (48%) The pass mark was 116/179 (65%), which is the same as December 2015. Twenty-one candidates obtained the Ebel mark but fell below the pass mark of Ebel + 1 SEM.

There was no difference in the performance of candidates based upon an analysis of gender, training, ethnicity, country of qualification or first language.

It was notable that performance varied inversely with stage of training. Only 13% (1/8) of candidates in ST7 passed the examination, compared to 59% (17/39) in ST5 and 77% (10/13) in ST4.

There was also a noticeable bimodal distribution of scores.

The candidates

118 candidates presented themselves for the examination. 75/118 (64%) were in OST, with the majority (39%) in ST5.

The written paper

The written part of the part 2 FRCOphth examination consists of a one multiple choice question paper, which is administered in 2 parts as two 2-hour, 90-question single best answer from 4 MCQ papers. 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. One question was removed from the examination papers as a result of this review.

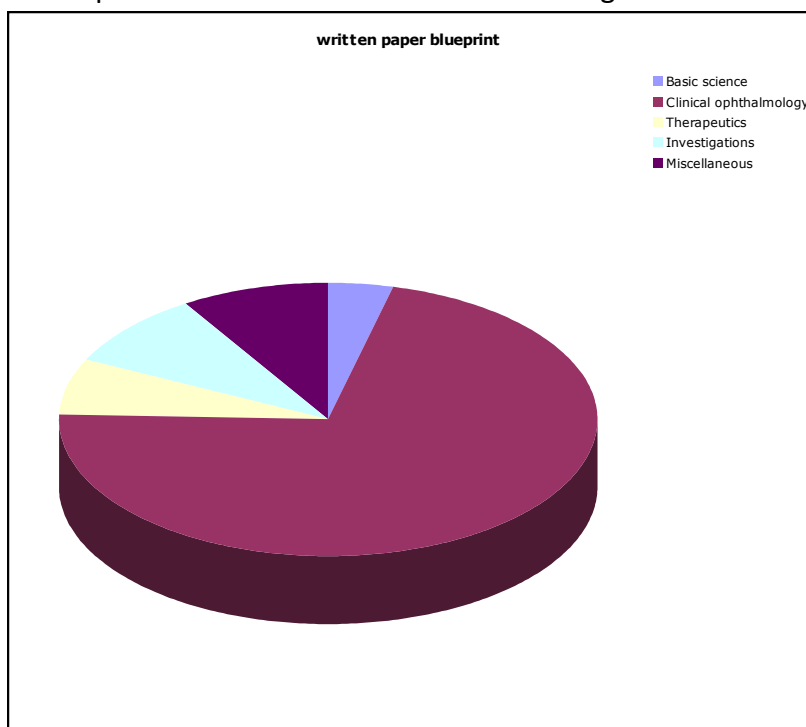
The Part 2 FRCOphth examination sub-committee reviews all of the questions with negative 33% item discrimination and low facility.

The MCQ paper blueprint

Table 1

		Paper 1	Paper 2	Total
Basic science		0	8	8
Clinical ophthalmology		90	64	128
	Cataract	10	0	10
	Neurology & pupils	0	16	16
	Glaucoma	10	0	10
	Strabismus & Paediatrics	16	0	16
	Retina	20	0	20
	Uveitis & oncology	0	6	12
	Trauma, oculoplastics and orbit	14	0	14
	Cornea & external eye	20	0	20
	Medicine	0	10	10
Management & therapeutics	Pharmacology & therapeutics	0	12	12
Investigations		0	15*	16
Miscellaneous		0	16	16
Total		90	89	179

* One question was removed from the marking



MCQ paper statistics:

Mean score:	116.4 (65%)
Median score:	115 (64%)
Standard deviation:	14.7 (8.2%)
Candidates:	118
KR20: (measurement of reliability)	0.85
Standard error of measurement (SEM):	5.7
Range of marks:	74 – 149 (41% - 83%)
Pass mark derived from Standard Setting:	110/179 (61%)
<i>(Pass rate without addition of SEM)</i>	<i>78/118 (66%)</i>

Pass mark + 1 SEM
Pass rate:

116/179 (65%)
57/118 (48%)

Table 2 Distribution of marks:

Score	Distribution	Total
71-75	//	2
76-80		0
81-85	/	1
86-90	//	2
91-95	///	3
96-100	////	5
101-105	//// //	12
106-110	//// //	17
111-115	//// //	19
116-120	//// //	7
121-125	//// //	17
126-130	//// //	13
131-135	//// //	7
136-140	//// //	9
141-145	//	2
146-150	//	2
151-155		0
<i>Total</i>		118

Analysis of questions

The Speedwell data provides analysis and identification of easy, moderate and difficult questions, and those, which are good, poor or perverse (negative) discriminators. Ideally all questions should be moderate and good.

Table 3

	Difficult (<25 correct)	Moderate (25-74 Correct)	Easy (>75 correct)	Total
Negative discrimination	3	9	5	17
Poor discrimination (0-0.19)	5	31	40	76
Good discrimination (0.2-0.6)	1	57	28	86
Total	9	97	73	179

Standard setting for MCQ paper (Ebel method)

Table 4: Classification of the questions:

	Difficult	Moderate	Easy	
Essential	3	28	44	75
Important	4	37	41	82
Supplementary	0	12	10	22
Total	7	77	95	179

Table 5: Percentage correct by borderline candidates

	Difficult	Moderate	Easy
Essential	0.6	0.7	0.8
Important	0.5	0.55	0.6
Supplementary	0.25	0.3	0.3

Table 6: Weighted score

	Difficult	Moderate	Easy	
Essential	1.8	19.6	35.2	56.6
Important	2	20.35	24.6	46.95
Supplementary	0	3.6	3	6.6
Total	3.8	43.55	62.8	110.15

MCQ pass mark (Ebel + 1 SEM): 116/179 (65%)

Breakdown of Written Results

Table 7 Breakdown of written results by training

	Failed	Passed	Total
In OST	35	40	75
Not in OST	26	17	43
Total	61	57	118

These differences are not statistically significant ($p = 0.18$ Fisher exact probability test)

Table 8 Breakdown of written results by stage of training

	Failed	Passed	Total
ST1	1	0	1
ST2	0	0	0
ST3	2	1	3
ST4	3	10 (77%)	13
ST5	12	17 (59%)	29
ST6	10	10 (50%)	20
ST7	7	1 (13%)	8
	35	39	74 (53%)

* Stage of training unknown for 1 candidate

Table 9 Breakdown of results by deanery

	Failed	Passed	Total
East of England	5	1	6
East of Scotland	1	0	1
KSS	0	0	0
London	14	12	26
Mersey	0	3	3
North of Scotland	0	1	1
North Western	1	1	2
Northern	0	1	1
N Ireland	1	2	3
Oxford	2	1	3
Peninsula	0	0	0
Severn	3	1	4
South of Scotland	1	0	1
Wales	1	2	3
Wessex	2	2	4
West Midlands	3	4	7
West of Scotland	1	2	3
Yorkshire	0	7	7
TOTAL	35	40	75

Table 10 Breakdown of written results by gender

	Failed	Passed	Total
Female	27	23	50
Male	33	34	67
Total	60	57	117

Gender unknown for 1 candidate

These differences are not statistically significant ($p = 0.71$ Fisher exact probability test)

Table 11 Breakdown of written results by country of qualification

	Failed	Passed	Total
UK	32	35	67
Outside UK (Inc Republic of Ireland)	8	8	16
Total	40	43	83

Country of qualification unknown for 35 candidates

These differences are not statistically significant ($p = 1.0$ Fisher exact probability test)

Table 12 Breakdown of written results by stated ethnicity

	Failed	Passed	Total
Non-white	42 (23)	34 (22)	76 (45)
White	12 (7)	19 (13)	31 (20)
Total	54 (30)	53 (35)	107 (65)

Ethnicity not stated by 11 candidates

(UK graduates)

These differences are not statistically significant for white/non-white
($p = 0.14$ (0.29) Fisher exact probability test)

Table 13 Breakdown of written results by first language

	Failed	Passed	Total
English	31	38	69
Other	11	5	16
Total	42	43	85

*First language unknown for 33 candidates

These differences are not statistically significant
($p = 0.10$ Fisher exact probability test)

Table 14 Breakdown of results by number of attempts

Attempt	Failed	Passed	Total
1 (first)	38	41	79
2	18	15	33
3	5	1	6
Any re-attempt	23	16	39

Table 15 Comparison with the written papers from previous examinations

Examination	Candidates	Pass mark	Pass rate	Pass rate in OST
September 2008	7	63%	86%	NA
February 2009	15	59%	53%	NA
September 2009	16	61%	38%	NA
February 2010	21	65%	48%	NA
September 2010	26	65%	58%	75%
February 2011	46	65%	46%	50%
September 2011	77	59%	68%	71%
February 2012	104	58%	65%	68%
September 2012	95	57%	81%	84%
February 2013*	109	61%	85%	89%
September 2013	103	59%	93%	97%
February 2014	117	58%	90%	94%
September 2014**	136	63%	70%	71%
December 2014**	106	65%	47%	54%
June 2015**	118	65%	48%	53%

*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

Table 16 Quality of questions

Exam	Facility				Discrimination		
	Difficult	Moderate	Easy		Negative	Poor	Good
Feb 13	8	96	76		15	96	69
Sep 13	7	83	88		12	98	68
Feb 14	7	98	75		16	102	62
Sep 14	5	107	67		10	107	62
June 15	9	97	73		17	76	86

Appendix 1 Hofstee pass mark

As a comparison to the pass mark identified using the Ebel method, the pass mark identified using the Hofstee method illustrated below:

Maximum fail rate	50%
(Minimum pass rate	(50%)
Minimum fail rate	20%
(Maximum pass rate	(80%)

Maximum pass mark	65%
Minimum pass mark	50%

(These values have been identified by the author and do not necessarily represent the views of the Part 2 Sub-committee)

Hofstee pass mark	108/179 (60.5%)
Pass rate with Hofstee pass mark	88/118 (75%)

This pass mark is slightly lower than the pass mark identified using the Ebel method + 1 SEM (65).

