

Examination Report

February 2014 Part 2 FRCOphth Written Examination



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Confidential report on the Part 2 FRCOphth written examination

The written paper of the twelfth sitting of the Part 2 FRCOphth examination was held on Monday 24 February 2014.

Summary

Since the change of the format of the written examination to a single 180 question multiple-choice paper, the reliability has increased to an acceptable standard (KR 0.8).

The pass rate for the examination remains high (90%) with a pass mark that is now relatively stable at just under 68% (58% this sitting).

The examination attracts candidates who are not in training posts in the UK (32/117) but they do not perform as well as those in OST. The pass rate for candidates in OST is 80/85 (94%) but only 25/32 (78%) for candidates who are not in OST. This provides some evidence to support the examination as a valid assessment of OST.

There were no significant differences in the performance of candidates based upon gender, ethnicity, first language or country of qualification.

The candidates

117 candidates presented themselves for the examination.

The written paper

The written part of the Part 2 FRCOphth examination consists of a one multiple choice question paper, which is administered in two 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.

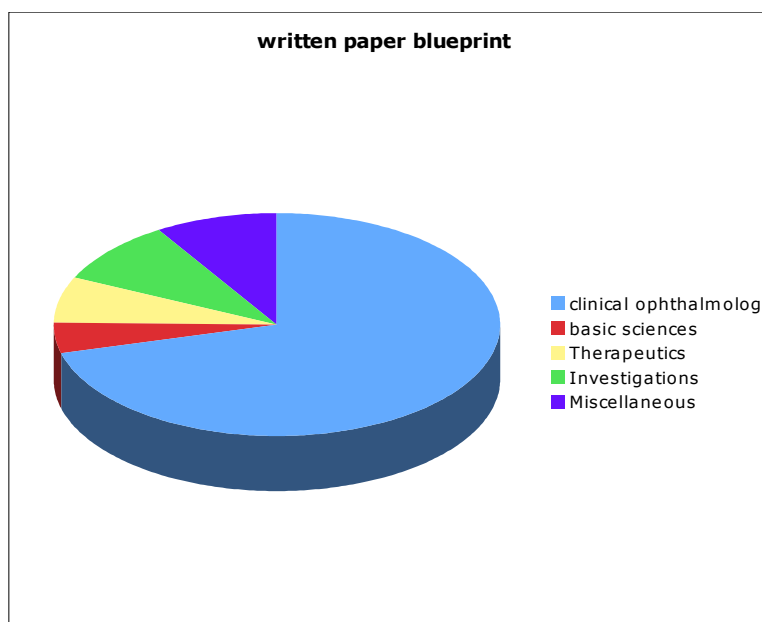
As part of the quality management of the College's assessment process, the written papers are reviewed by the Senior Examiner after marking, but before the results are known. No questions were removed from the examination papers as a result of this review.

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

The MCQ paper blueprint

Table 1

		February 2014	Paper
Basic science		8	
	Anatomy & physiology	2	2
	Pathology & microbiology	2	2
	Optics	1	2
	Genetics	3	2
Clinical ophthalmology		128	
	Cataract	10	1
	Neurology & pupils	16	2
	Glaucoma	10	1
	Strabismus	8	1
	Paediatrics	8	1
	Retina	20	1
	Uveitis & oncology	12	2
	Oculoplastics and orbit	10	1
	Cornea & external eye	20	1
	Trauma	4	1
	Medicine	10	2
Management & therapeutics	Pharmacology & therapeutics	12	2
Investigations		16	
	Ophthalmic	9	2
	Orthoptic	3	2
	Neuroimaging	3	2
	Other	1	2
Miscellaneous		16	
	Statistics & epidemiology	3	2
	EBM and research	3	2
	Medicolegal/Ethics/Driving	4	2
	Health economics	1	2
	Nutrition	1	2
	Guidelines/standards	4	2
Total		180	



MCQ paper statistics:

Mean score:	120 (67%)
Median score:	120 (67%)
Standard deviation:	12.4 (7%)
Candidates:	117
KR20: (measurement of reliability)	0.8
Standard error of measurement (SEM):	5.61
Range of marks:	89-145 (49%-81%)
Pass mark derived from Standard Setting:	103 (58%)

Pass rate: 105/117 (90%)

Table 2 Distribution of marks:

Score	Distribution	Total
86-90	//	2
91-95	//	2
96-100	////	4
101-105	//// / //	7
106-110	//////	8
111-115	//////////	18
116-120	//////////	16
121-125	//////////	17
126-130	//////////	19
131-135	////////	8
136-140	/////////	11
141-145	///	3
146-150		0
151-155		0
<i>Total</i>		

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	2	9	5	16
Poor discrimination (0-0.19)	4	46	52	102
Good discrimination (0.2-0.6)	1	43	18	62
Total	7	98	75	180

Standard setting for MCQ paper (Ebel method)

Table 4: Classification of the questions:

	Difficult	Moderate	Easy	
Essential	1	15	36	52
Important	3	25	60	88
Supplementary	7	9	24	40
Total	11	49	120	180

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	0.6	10.5	28.8	39.9
Important	1.5	13.75	36	51.25
Supplementary	1.75	2.7	7.2	11.65
Total	3.85	26.95	72	102.8

MCQ pass mark: 103/180 (58%)

Breakdown of Written Results

Table 7 Breakdown of written results by training

	Failed	Passed	Total
In OST	5	80	85
Not in OST	7	25	32
Total	12	105	117

These differences are statistically significant ($p = 0.02$ Fisher exact probability test)

Table 8 Breakdown of written results by stage of training

	Failed	Passed	Total
ST3	1	0	1
ST4	0	11	11
ST5	2	33	35
ST6	2	25	27
ST7	0	6	6
	5	75*	80

* Stage of training unknown for 5 candidates

Table 9 Breakdown of results by deanery

	Failed	Passed	Total
East Midlands	1	5	6
East of England	0	6	6
East of Scotland	1	1	2
KSS	0	0	0
London	2	18	20
Mersey	0	4	4
North of Scotland	0	0	0
North Western	0	5	5
Northern	0	4	4
N Ireland	0	1	1
Oxford	0	2	2
Peninsula	0	1	1
Severn	0	1	1
South of Scotland	1	2	3
Wales	0	3	3
Wessex	0	3	3
West Midlands	0	7	7
West of Scotland	0	5	5
Yorkshire	0	12	12
TOTAL	5	80	85

Table 10 Breakdown of written results by gender

	Failed	Passed	Total
Female	5	36	41
Male	7	69	76
Total	12	105	117

These differences are not statistically significant ($p = 0.75$ Fisher exact probability test)

Table 11 Breakdown of written results by country of qualification

	Failed	Passed	Total
UK	6	55	61
Outside UK (Inc Republic of Ireland)	6	50	56
Total	12	105	117

These differences are not statistically significant ($p = 1$ Fisher exact probability test)

Table 12 Breakdown of written results by stated ethnicity

	Failed	Passed	Total
Non-white	10 (5)	65 (33)	75 (38)
White	1 (1)	31 (20)	32 (21)
Total	11 (6)	96 (53)	107 (59)

Ethnicity not declared by 10 candidates (UK graduates)

These differences are not statistically significant for white/non-white ($p = 0.17$ (0.41) Fisher exact probability test)

Table 13 Breakdown of written results by first language

	Failed	Passed	Total
English	7	58	65
Other	5	40	65
Total	12	98	110

*First language unknown for 7 candidates

These differences are not statistically significant

($p = 1$ Fisher exact probability test)

Table 14 Breakdown of results by number of attempts

Attempt	Failed	Passed	Total
1 (first)	8	68	76
2	2	19	21
3	2	9	11
4	0	2	2
5	0	2	2
6	0	4	4
7	0	0	0
8	0	1	1
Any re-attempt	4	37	41

Comparison with the written papers from previous examinations

Table 15

Examination	Candidates	Pass mark	Pass rate
September 2008	7	63%	86%
February 2009	15	59%	53%
September 2009	16	61%	38%
February 2010	21	65%	48%
September 2010	26	65%	58%
February 2011	46	65%	46%
September 2011	77	59%	68%
February 2012	104	58%	65%
September 2012	95	57%	81%
February 2013	109	61%	85%
September 2013	103	59%	93%
February 2014	117	58%	90%

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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	113/180 (62.5%)
Pass rate with Hofstee pass mark	86/117 (74%)

This pass mark is higher than the pass mark identified using the Ebel method.

