

# Examination Report



The ROYAL COLLEGE of  
OPHTHALMOLOGISTS

## December 2014 Part 2 FRCOphth Written Examination

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January 2015

## **Public Report on the Part 2 FRCOphth examination**

The fourteenth written paper Part 2 FRCOphth examination was held on Monday 1 December 2014. The written paper is now a completely separate part of the examination and, if they pass, candidates are allowed up to seven calendar years to pass the oral part.

### **Summary**

Since the change of the format of the written examination to a single 180 question multiple-choice paper, the reliability has maintained an acceptable standard (KR 0.8). The quality of the questions is slightly improved compared to the previous 3 MCQ papers. Two questions were removed from this paper, which was therefore marked out of 178.

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. Unsurprisingly the pass rate for the examination has fallen to 47%, which is the lowest since Feb 2011, with a pass mark of 65% (the highest since Feb 2011).

There was no difference in the performance of candidates based upon an analysis of gender, ethnicity, country of qualification or first language. Candidates in OST were more successful than those who were not in training.

### **The candidates**

106 candidates presented themselves for the examination. 74 were in OST, with the majority (21) in ST5.

### **The written paper**

The written component 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 eligible to apply to sit the oral component of the examination.

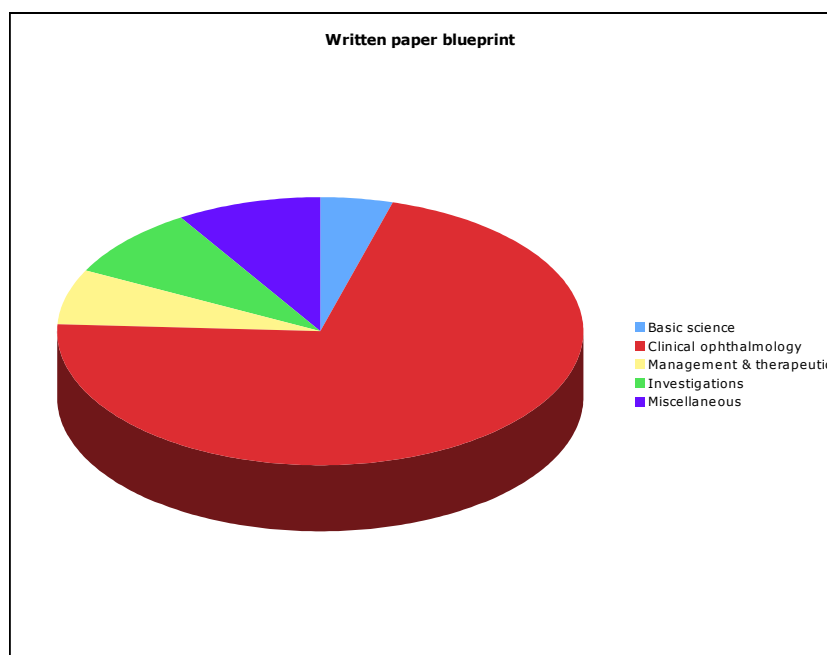
As part of the quality management of the College's assessment process, the written papers are reviewed by the Senior Examiner after marking, but before the results are known. Two question was removed from the examination papers as a result of this review.

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		4	4	8
Clinical ophthalmology		63	64	127
	Cataract	5	5	10
	Neurology & pupils	8	8	16
	Glaucoma	5	5	10
	Strabismus & Paediatrics	8	8	16
	Retina	9	10	19
	Uveitis & oncology	6	6	12
	Trauma, oculoplastics and orbit	7	7	14
	Cornea & external eye	10	10	20
	Medicine	5	5	10
Management & therapeutics	Pharmacology & therapeutics	6	6	12
Investigations		7	8	15
Miscellaneous	Research, EBM, ethics, health economics, guidelines	8	8	16
<b>Total</b>		<b>89</b>	<b>89</b>	<b>178</b>



### MCQ paper statistics:

Mean score:	113/178 (63%)
Median score:	114/179 (64%)
Standard deviation:	13.3 (7.5%)
Candidates:	106
KR20: (measurement of reliability)	0.82
Standard error of measurement (SEM):	5.69
Range of marks:	78-141
Pass mark derived from Standard Setting:	109/178 (61%)
Pass mark + 1 SEM	<b>115/178 (65%)</b>

**Pass rate: 50/106 (47%)**

**Table 2**                      **Distribution of marks:**

<i>Score</i>	<i>Distribution</i>	<i>Total</i>
76-80	/	1
81-85	//	2
86-90	///	3
91-95	//// /	6
96-100	////	4
101-105	//// // //	14
106-110	//// // // //	16
<b>111-115</b>	//// // // //	12
116-120	//// // // //	16
121-125	//// // // //	15
126-130	//// //	8
131-135	////	4
136-140	////	4
141-145	/	1
146-150		0
<i>Total</i>		106

**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	1	9	5	15
Poor discrimination (0-0.19)	5	39	47	91
Good discrimination (0.2-0.6)	0	56	16	72
Total	6	104	68	178

## Standard setting for MCQ paper (Ebel method)

**Table 4: Classification of the questions:**

	Difficult	Moderate	Easy	
Essential	1	22	49	72
Important	4	32	45	81
Supplementary	3	8	14	25
Total	8	62	108	178

**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	15.4	39.2	55.2
Important	2	17.6	27	46.6
Supplementary	0.75	2.4	4.2	7.35
Total	3.35	35.4	70.4	109.15

MCQ pass mark (Ebel + 1 SEM): 115/178 (65%)

## Breakdown of Written Results

**Table 7 Breakdown of written results by training**

	Failed	Passed	Total
In OST	34	40	74
Not in OST	22	10	32
Total	56	50	106

These differences are statistically significant ( $p = 0.036$  Fisher exact probability test)

**Table 8 Breakdown of written results by stage of training**

	Failed	Passed	Total
ST1	2	0	2
ST2	1	0	1
ST3	3	3	6
ST4	4	10	14
ST5	11	13	24
ST6	5	9	14
ST7	3	1	4
TOTAL	29	36	65

\* Stage of training unknown for 9 candidates

**Table 9 Breakdown of results by deanery**

	Failed	Passed	Total
East Midlands	0	2	2
East of England	2	1	3
East of Scotland	1	1	2
KSS	1	1	2
London	10	9	19
Mersey	0	0	0
North of Scotland	2	0	2
North Western	1	5	6
Northern	1	0	1
N Ireland	0	0	0
Oxford	1	4	5
Peninsula	1	0	1
Severn	3	1	4
South of Scotland	1	0	1
Wales	1	4	5
Wessex	3	3	6
West Midlands	3	4	7
West of Scotland	1	1	2
Yorkshire	2	4	6
TOTAL	34	40	74

**Table 10 Breakdown of written results by gender**

	Failed	Passed	Total
Female	24	18	42
Male	31	32	63
Total	55	50	105

Gender unknown for 1 candidate

These differences are not statistically significant ( $p = 0.55$  Fisher exact probability test)

**Table 11 Breakdown of written results by country of qualification**

	Failed	Passed	Total
UK	24	27	51
Outside UK (Inc Republic of Ireland)	32	23	55
Total	56	50	106

These differences are not statistically significant ( $p = 0.33$  Fisher exact probability test)

**Table 12 Breakdown of written results by stated ethnicity**

	Failed	Passed	Total
Non-white	42 (16)	34 (18)	76 (34)
White	9 (6)	16 (10)	25 (16)
Total	51 (22)	50 (28)	101 (50)

Ethnicity not stated by 5 candidates (UK graduates)

These differences are not statistically significant for white/non-white ( $p = 0.111$  (0.559) Fisher exact probability test)

**Table 13 Breakdown of written results by first language**

	Failed	Passed	Total
English	33	33	66
Other	18	15	33
Total	51	48	99

\*First language unknown for 7 candidates

These differences are not statistically significant ( $p= 0.83$  Fisher exact probability test)

**Table 14 Comparison with the written papers from previous examinations**

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%
September 2014**	136	63%	70%
December 2014**	106	65%	47%

\*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

## 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	106/178 (60%)
Pass rate with Hofstee pass mark	76/106 (72%)

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

