

Examination Report



December 2017 Part 2 FRCOphth Written Examination

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Summary

The written paper of the 19th sitting of the part 2 FRCOphth examination was held on 4 December 2017.

This is the eighth of the de-coupled part 2 written papers where the pass mark is elevated by +1 SEM.

The reliability of the examination remains high (KR 0.9), and meets GMC expectations. The proportion of questions with a good item discrimination is 41% (with a 33% discrimination index greater than 0.250). One question was removed from paper 1 and 1 question was removed from paper 2, which was therefore marked out of 178.

Thirteen candidates obtained the Ebel mark (60%) but fell below the pass mark of Ebel +1 SEM (62%). The addition of +1 SEM has had a significant impact on the pass rate which would be 75% rather than 64%.

The pass mark for the written examination was raised by 1 SEM above the mark identified by the standard set by the Ebel method from 60% to 62%. The pass rate for the examination has increased from the last sitting to 64% from 59% (July 17), and continues to remain higher for trainees at 66%. Table 11 reviews these statistics over the last 9 years. The pass mark was very similar to July 2017 however there was a difference in the pass rate, 54% in July 17 and 64% at this sitting.

The candidates

121 candidates presented themselves for the examination. 70/121 (58%) were in OST, with the majority in ST4 and 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. Three 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

		Paper 1	Paper 2	Total
Clinical ophthalmology		64	64	128
	Trauma	2	2	4
	Oculoplastics and 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 and external eye	10	10	20
	Uveitis and oncology	6	6	12
	Neurology and pupils	8	8	16
	Medicine	5	5	10
Pharmacology & therapeutics	Pharmacology & therapeutics	6	6	12
Investigations		8	7	15
	Ophthalmic	4	4	8
	Orthoptic	1	2	3
	Neuro-imaging	2	1	3
	Other		0	0
Miscellaneous		7	8	15
	Statistics and epidemiology	2	1	3
	Research and EBM	1	2	3
	Nutrition	1		1
	Ethics and driving	2	2	4
	Economics		1	1
	Standards and guidelines	1	2	3
Basic science		4	4	8
	Anatomy and physiology	1	1	2
	Pathology and microbiology	1	1	2
	Genetics	2	1	3
	Optics		1	1
Total		89*	89*	178

* Two questions were removed from the marking, one from Paper 1 and one from Paper 2

MCQ paper statistics:

Mean score:	115/178	(65%)
Median score:	116/178	(65%)
Standard deviation:	15	(8%)
Candidates:	121	
KR20: (measurement of reliability)	0.9	
Standard error of measurement (SEM):	5.67	
Range of marks:	74 -149	(42% - 84%)
Pass mark derived from Standard Setting:	106/178	(60%)
<i>(Pass rate without addition of SEM)</i>	91/121	(75%)
Pass mark + 1 SEM	111/178	(62%)
Pass rate:	77/121	(64%)
Pass rate in OST	46/70	(66%)

Table 2 **Distribution of marks**

Score	Distribution	Total
66-70		0
71-75	/	1
76-80	/	1
81-85		0
86-90	///	3
91-95	//// //	7
96-100	//// ////	10
101-105	//// ////	9
106-110	//// //// ///	13
111-115	//// //// //// /	16
116-120	//// //// //// ///	18
121-125	//// //// //// //	17
126-130	//// ////	10
131-135	////	5
136-140	//// //	7
141-145	///	3
146-150	/	1
151-155		0
<i>Total</i>		121

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.

Table 3

	Low (<25 correct)	Moderate (25-74 Correct)	High (>75 correct)	Total
Negative discrimination	1	11	3	15
Poor discrimination (0-0.19)	7	41	42	90
Good discrimination (0.2-0.6)	0	48	25	73
Total	8	100	70	178

Standard setting for MCQ paper (Ebel method)

Table 4 Classification of the questions

	Difficult	Moderate	Easy	TOTAL
Essential	4	20	47	71
Important	5	28	40	73
Supplementary	7	12	15	34
Total	16	60	102	178

Table 5 Expected 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	2.4	14	37.6	54
Important	2.5	15.4	24	41.9
Supplementary	1.75	3.6	4.5	9.85
Total	6.65	33	66.1	105.75

MCQ pass mark (Ebel + 1 SEM): 111/178 (62%)

Breakdown of Written Results

Table 7 Breakdown of written results by training

	Failed	Passed	Total
In OST	24 (34%)	46 (66%)	70
Not in OST	20 (39%)	31 (61%)	51
Total	44	77	121

Table 8 Breakdown of written results by stage of training

	Failed	Passed	Total
ST1	0	0	0
ST2	0	0	0
ST3	2 (29%)	5 (71%)	7
ST4	6 (25%)	18 (75%)	24
ST5	6 (25%)	18 (75%)	24
ST6	7 (58%)	5 (42%)	12
ST7	3 (100%)	0	3
			70

Table 9 Breakdown of results by deanery

	Failed	Passed	Total
East Midlands	1	1	2
East of England	4	4	8
East of Scotland	0	0	0
KSS	0	4	4
London	3	10	13
Mersey	2	3	5
North of Scotland	0	1	1
North Western	0	1	1
Northern	2	0	2
N Ireland	1	0	1
Oxford	2	3	5
Peninsula	0	0	0
Severn	1	3	4
South East of Scotland	0	1	1
Wales	0	1	1
Wessex	1	3	4
West Midlands	2	7	9
West of Scotland	1	3	4
Yorkshire	4	1	5
TOTAL	24	46	70

Table 10 Breakdown of results by number of attempts

Attempt	Failed	Passed	Total
1 (first)	25	64	89
2	12	9	21
3	5	4	9
4	1	0	1
5	1	0	1
Any re-attempt	19	13	32

Table 11 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%
November 2015**	145	64%	41%	46%
June 2016**	171	64%	70%	79%
December 2016**	143	64%	77%	83%
July 2017**	113	63%	59%	72%
December 2017**	121	62%	64%	66%

*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 12 Quality of questions

Exam	Facility				Discrimination		
	Low	Moderate	High		Negative	Poor	Good
Feb 13	8	96	76		15	96	69 (38%)
Sep 13	7	83	88		12	98	68 (38%)
Feb 14	7	98	75		16	102	62 (35%)
Sep 14	5	107	67		10	107	62 (35%)
June 15	9	97	73		17	76	86 (48%)
Nov 15	7	106	65		17	102	59 (33%)

Jun 16	7	90	83		12	101	67 (37%)
Dec16	7	96	74		11	96	70 (40%)
Jul 17	10	100	69		14	86	78 (44%)
Dec 17	8	100	70		15	90	73 (41%)

Table 13 Cumulative results by deanery (September 2010 to date)

Deanery	Number of passes	Number of candidates	Pass rate %
East Scotland	9	10	90
West Midlands	52	77	86
Oxford	30	41	73
Severn	27	37	73
North Scotland	8	11	73
London KSS	174	244	71
Northern Ireland	14	20	70
Northern	25	37	68
East Midlands	28	43	65
South East Scotland	14	22	64
Mersey	33	52	63
West Scotland	21	36	58
North Western	35	62	56
Peninsula	14	25	56
Wessex	18	33	55
Yorkshire	45	83	54
Wales	23	45	51
East of England	27	53	51
TOTAL	597	931	64