

Worshipful Company of Spectacle Makers

Level 4 Year 2 Diploma for Optical Technicians



Unit 5: The Properties of Ophthalmic Lenses

Summer 2018

Duration: 1.5 hours

Candidate Number:

Date:

Answer ALL Questions

Number of Supplementary Sheets used (if any), including graph paper.

For office use only

	Questions				Total	
Question number	1	2	3	4	Marks	%
Marks						
Moderated						

Examiner's signature

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Question 1

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Q1a)	What is meant by jump in bifocal lenses?	(8 marks)
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Q1b)	Find the jump in the following two bifocals: i) +4.25DS +2.00ADD R45 SEG ii) +0.50 / -0.50 x 90 +2.00ADD S45x22.5 SEG	(6 marks)
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Q1c)	How is the no-jump criterion achieved?	(6 marks)
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Question 2

Q2a)	Describe what is meant by the term Best Form Lens .	(5 marks)
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Q2b)	List the aberrations that are due to the form of the lens.	(5 marks)
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Q2c)	List the aberrations that are due to the lens material .	(5 marks)
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Q2d)	How are lens surfaces chosen to produce a Point Focal lens design?	(5 marks)
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Question 3

The following spectacles were ordered by the Optician:

R -3.00 / -2.50 x 180 +2.50 ADD
L -2.50 / -0.50 x 180 +2.50 ADD
S25 x 18.5 seg drop 4mm

Examiner's
use only

Q3a)	Find the prismatic effect at the near visual point (10mm below the distance optical centre)	(6 marks)
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Q3b)	What is the differential prism at this point?	(6 marks)
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Q3c)	Name two bifocal types that can relieve differential prism at the near visual point.	(8 marks)
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Question 4

Q4a)	What are the differences between soft and hard Progressive Power lens designs?	(6 marks)
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Q4b)	What are the advantages of aspherical surfaces with reference to high powered lenses?	(10 marks)
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Q4c)	Why is it that compensated powers are used, that differs from the prescription that is supplied by the Optician?	(4 marks)
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End of questions for this paper

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Please read carefully and follow these instructions when told do so by the Examiner/Invigilator.

1. Before you start to answer any question, take a few minutes to read through the paper.
2. Please ensure your candidate number and date are in the boxes on the front cover of this booklet.
3. Please **DO NOT** write your name on this booklet. Candidates must remain anonymous for marking purposes.
4. Write your answers as clearly as you can, using a black/blue pen only. Do not use a pencil. If the examiner cannot read your writing or figures you may lose marks, or even receive no marks at all. **Pencils may only be used for graphs and diagrams.**
5. You should read each question carefully, and make sure that you know what you have to do before you start to answer.
6. You must write your answers in the space provided. Additional paper may be used if necessary, but you must show your candidate number and the question number at the top of each sheet; not your name. You must also annotate the box on the front cover of this booklet to show how many extra sheets you used.
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