

Worshipful Company of Spectacle Makers

Level 3 Optical Support

Unit 10: Spectacle Lens Production Methods



Duration: 1.5 hours

Candidate Number:

Date:

Answer FOUR out of the five questions

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

For office use only

| | Unit 10 | | | | | Total | |
|-----------------|---------|---|---|---|---|-------|---|
| Question number | 1 | 2 | 3 | 4 | 5 | Marks | % |
| Marks | | | | | | | |
| Moderated | | | | | | | |

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Question 1

a) What are the **two** different forms of material for plastics lenses? **(4 marks)**

b) Describe the process of producing **CR39** finished or semi-finished blanks. **(6 marks)**

Question 1

d) What is the common lens type for the following multifocal lens description:
'These lenses are designed to give continuous vision at all distances instead of the predetermined working distances allowed by bifocal or trifocal lenses. This lens provides a gradual change of addition either over the whole lens or over a region intermediate between areas of uniform power'.

(2 marks)

Question 2

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- b) Describe the sequence of operations for surfacing a **free form** lens from marking to de-blocking? **(10 marks)**

Question 2

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Question 3

b) In **Conventional** surfacing, what tools are required for:

- (i)** Generating **(2 marks)**
- (ii)** Smoothing **(4 marks)**
- (iii)** Polishing **(4 marks)**

Question 4

From the descriptions below, identify the different lens forms:-

- (i) Spherical concave front curve with a spherical or toroidal back curve in most index glass or plastics material.
- (ii) Spherical front curve in clear glass with a bonded photochromic wafer also on the front with a spherical or toroidal rear surface.
- (iii) A surface with a plus curve and a minus curve set 90 degrees to each other.
- (iv) Spherical front curve incorporating a higher index segment that cannot be felt when feeling the front surface, commonly D or round segment, with a spherical or toroidal back curve, in glass material.

(20 marks)

Question 5

- b) You are tasked to carry out final inspection on an uncut progressive lens, state the correct standard to use plus **four** items that you will need to check to qualify those standards.

(10 marks)

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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.**
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