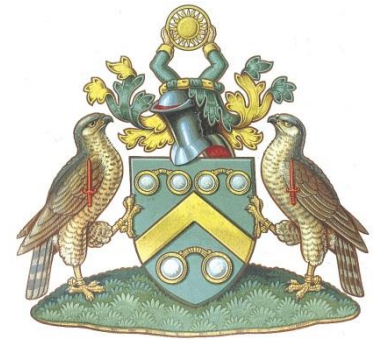


# Worshipful Company of Spectacle Makers



## Level 2 Optical Support

Unit 7: The Glazing of Spectacles

**Duration: 35 mins**

Candidate Number:

Date:

### Answer ALL Questions

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

#### For office use only

Question number	Unit 7			Total	
	1	2	3	Marks	%
Marks					
Moderated					

Examiner's signature

Moderator's signature

This booklet is the property of the WCSM and **must not be removed** by the candidate from the examination room.



This page  
has been  
left blank.

**Question 1**

Answer all the following **10** multiple-choice questions.

**(20 marks)**

- i) Which would give the most thickness reduction for a **-8.00 D** lens?
- a) A lens made from low refractive index material
  - b) A lens made from high refractive index material
  - c) An aspheric lens
  - d) A large frame size
- ii) Which would give the greatest weight reduction for a **+8.00 D** lens?
- a) A high refractive index glass lens
  - b) A high refractive index plastics lens
  - c) A low refractive index aspheric glass lens
  - d) A high refractive index aspheric plastics lens
- iii) Which is best suited to a wrap-around frame?
- a) A low base curved lens
  - b) A high base curved lens
  - c) A glass lens
  - d) An aspheric lens

- iv) Which lens would benefit the most from being surfaced?
- a) A low powered plus lens into a large frame.
  - b) A high powered plus lens into a small frame
  - c) A medium powered minus lens
  - d) A low powered minus lens
- v) Which bifocal would have a smooth front surface?
- a) An E line bifocal
  - b) A glass solid bifocal
  - c) A glass fused bifocal
  - d) A plastics D35 seg bifocal
- vi) Which statement is true regarding refractive index?
- a) CR39  $n = 1.498$
  - b) Polycarbonate  $n = 1.64$
  - c) Trivex  $n = 1.74$
  - d) High Index Resin  $n = 1.530$  to  $n = 1.610$
- vii) Which lens material is not available in a photochromic version?
- a) Spectralite
  - b) Polycarbonate
  - c) Glass  $n = 1.90$
  - d) Glass  $n = 1.60$
- viii) Which of the following is not a plastics frame material?

- a) Cellulose Acetate
- b) Optyl
- c) Polyamide
- d) Monel
- ix) Which statement is **true**?
- a) Cellulose Propionate is injection moulded
- b) Cellulose Acetate frames should be heated to 80<sup>o</sup>+ for adjustment
- c) *Nickel Silver is a hypo-allergenic material*
- d) *Titanium frames can be repaired easily by soldering*
- x) Which statement is **incorrect**?
- a) *An Anti-reflection coat is an example of vacuum coating*
- b) *Hard coatings can be produced by dipping or spinning adjustment*
- c) *Photochromic lenses are dip dyed*
- d) *Polarising is an integral part of the lens*

**Question 2**

Examiner's  
use only

Answer all the following **10** multiple-choice questions.

**(20 marks)**

- (i) Which lens material can be thermally toughened?
- a) Polycarbonate
  - b) Glass
  - c) CR 39
  - d) Trivex
- (ii) When marking bifocal lenses for glazing why is it best to set R and L centres to the same height?
- a) To ensure the bifocal segments are the same height
  - b) To ensure there is no unwanted differential vertical prism
  - c) To ensure there is no unwanted differential horizontal prism
  - d) To ensure there is no chromatic aberration
- (iii) What is the correct sequence of events for glazing a lens?
- a) Mark lens ctrs. on the foci with 3 dots, block the lens, trace shape, cut lens
  - b) Mark lens on the foci with 3 dots, trace shape, cut the lens, block the lens
  - c) Block the lens, mark lens ctrs. on the foci with 2 dots, trace shape, cut lens
  - d) Mark the lens on the foci with 2 dots, block the lens, trace shape, cut lens
- iv) It is usual to hand edge the bevel on both sides of a lens because:
- a) It improves the vision through the lens
  - b) The lens will fit better in the frame

Examiner's  
use only

- c) It removes any sharp edges
- d) It reduces chromatic aberration
- v) Where on a frame would you measure the bridge width?
- a) On HCL
- b) 5mm below HCL
- c) 10mm below HCL
- d) 15mm below HCL
- vi) When may a small, isolated surface defect be acceptable on a lens in accordance with **EN ISO 8980-1**?
- a) Never
- b) Beyond a zone 30mm diameter centred around the reference point
- c) At the very extreme edge of the lens
- d) Beyond a zone 40mm diameter centred around the reference point
- vii) A focimeter is designed to read:-
- a) Back vertex power
- b) Front vertex power
- c) Back and front vertex power
- d) None of the above
- viii) A minus lens decentered inwards gives which type of prismatic effect?
- a) Base Up
- b) Base In
- c) Base Down

Examiner's  
use only



- d) Base Out
- ix) Which of the following can be caused by unwanted prismatic effects?
- a) Double vision
- b) Clear vision
- c) Anisometropia
- d) Myopia
- xi) What is the distance between the two permanently engraved circles on a progressive lens
- a) 32mm
- b) 34mm
- c) 36mm
- d) Depends on the Manufacturer

### Question 3

Answer all the following **10** multiple-choice questions.

**(20 marks)**

- (i) How would you fit and retain lenses into a full rim plastics frame made from cellulose acetate?
- a) Cold glaze
- b) Fit with heat
- c) Cord
- d) Rim screws
- ii) When fitting a semi-rimless frame, what is the fixed piece of cord running along the top rim called?
- a) Figure of five
- b) Figure of nine
- c) Figure of six

Examiner's  
use only

- d) Figure of eight
- iii) What term is used to describe fitting lenses into plastics frames?
- a) Compression
- b) Rasping
- c) Springing-in
- d) Bevelling
- iv) Which of the terms below does **not** relate to rimless glazing?
- a) Grooving
- b) Compression plugs
- c) Drill-points
- d) Polished edges
- v) Which of the terms below relates to full-rim metal glazing?
- a) Nylon cord
- b) Cold glaze
- c) Rim joints
- d) Thermosetting
- vi) Which of the names below is not a commonly used eye-shape?
- a) Diamond
- b) Quadra
- c) Round
- d) Aviator

Examiner's  
use only

vii) On which type of frame would you use a mini-bevel?

- a) Semi-rimless
- b) Metal
- c) Rimless
- d) Supra

viii) Which natural frame material can no longer be imported for use?

- a) Leather
- b) Wood
- c) Real tortoise shell
- d) Bone (or Horn)

ix) PMMA (Poly-methyl Methacrylate) is another name for?

- a) Glass
- b) Perspex
- c) Polycarbonate
- d) Carbon fibre

x) Which of these materials is not metal?

- a) Titanium
- b) Rolled gold
- c) Aluminium
- d) Optyl

Examiner's  
use only



This page  
has been  
left blank.

**DO NOT TURN THIS PAPER OVER UNTIL ADVISED TO DO SO BY THE INVIGILATOR**

### Important Instructions for Candidates

Please read carefully and follow these instructions when told to 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.
7. Please do not write in the margins.
8. Make sure your diagrams are as clear and neat as possible; you will get marks for doing so. If you need to draw a graph, use as large a scale as practicable; this will give the most accurate answer.
9. When answering mathematical questions, write **ALL YOUR CALCULATIONS IN FULL**. Even if you get the final answer wrong, you may get credit for the parts of the calculation that are correct.
10. After you have completed each answer, re-read the question to make sure you have answered it fully.
11. Try to leave yourself enough time to check the completed paper through before handing it in.
12. Do not tear out any part of this booklet. All work must be handed in.
13. Before handing your paper in, ensure your Candidate number is entered clearly on the front of this booklet and on any extra sheets you may have used.
14. Attach any sheets to this booklet and annotate how many there are in the box on the front of this booklet.

**When told to do so by the Invigilator, you may turn the paper over and begin**