

Worshipful Company of Spectacle Makers

Level 4 Year 1 Diploma for Optical Assistants



Unit 6 – Mathematics for Optical Assistants

Summer 2018

Duration: 1 hour

Candidate Number:

Date:

--	--	--	--	--	--

Answer ALL questions.

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

For office use only

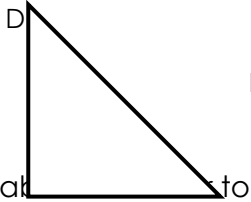
	Questions				Question	
Question number	1	2	3	4	Marks	%
Marks						
Moderated						

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

<p>Q1b)</p>	 <p>Triangle DEF is similar to triangle ABC and side DE is 5cm long.</p> <p>Find the length of side EF.</p>	<p>(6 marks)</p>
--------------------	---	-------------------------

Examiner's
use only

Question 3

Q3a)	State the following angles which are expressed in decimal form into degrees and minutes :	
	i) 16.50	(2 marks)
	ii) 32.75	(2 marks)

Examiner's
use only

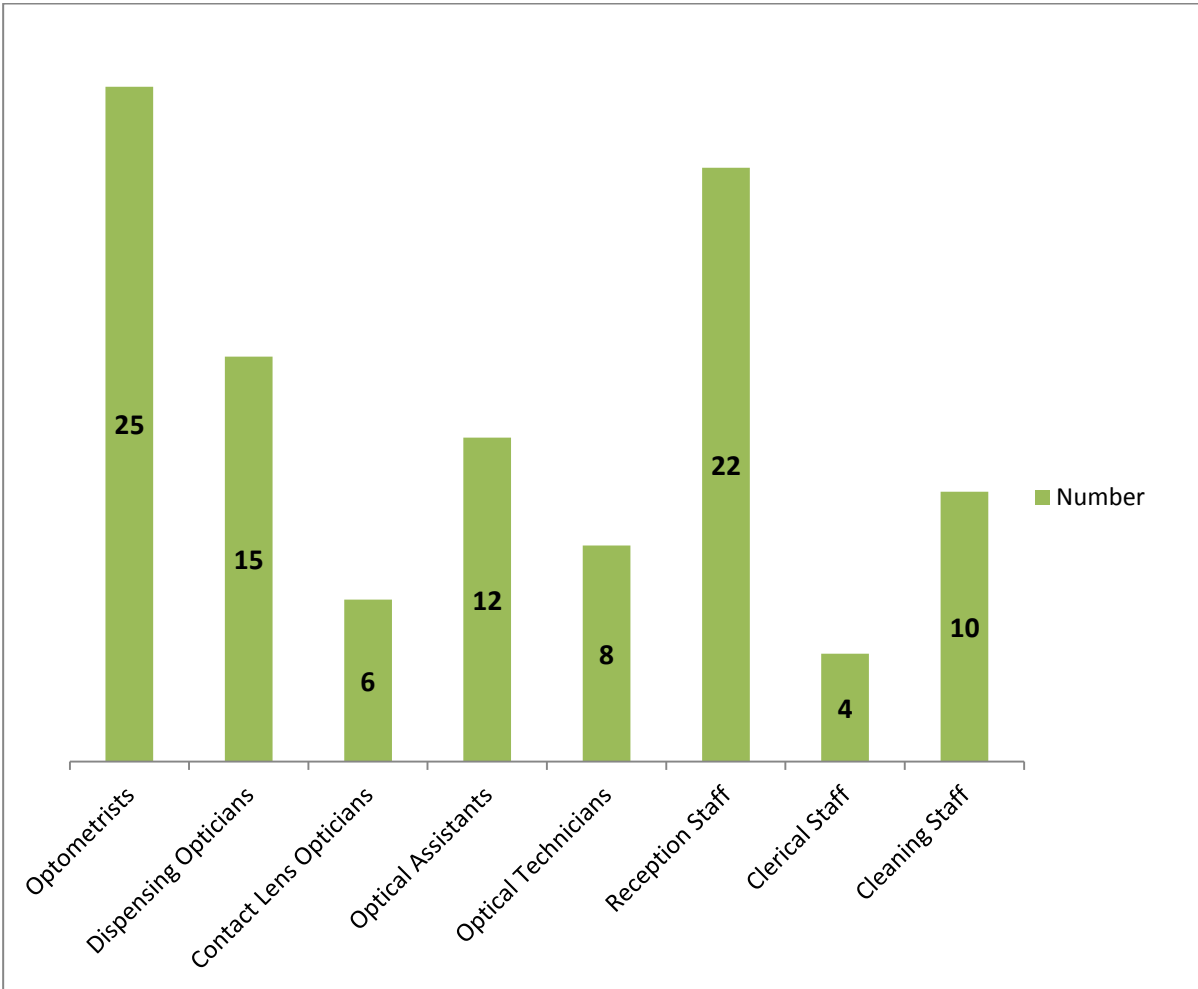
Q3b)	Convert the following angles into decimal form :	
	i) $24^{\circ}52'$	(2 marks)
	ii) $67^{\circ}18'$	(2 marks)

Q3c)	Convert the following trigonometrical values into angles expressed in degrees, minutes and seconds:	
		(3 marks)

Examiner's
use only

Question 4

The following bar graph shows the numbers of staff employed by an optical group.



Find the following from the graph:

Q4a)	The total number of staff employed	(2 marks)
-------------	------------------------------------	------------------

Q4b)	The proportion of staff who are receptionists, expressed as a decimal.	(3 marks)
-------------	--	------------------

Examiner's
use only

Q4c)	The percentage of staff who are optical technicians.	(3 marks)
-------------	--	------------------

Q4d)	The cost of employing all the optometrists, if the total expenditure on salaries is £3,102,000 and the optometry salaries are 52% of the total.	(6 marks)
-------------	---	------------------

Q4e)	The ratio of professional staff to non-professional staff assuming optometrists, dispensing opticians, contact lens opticians and optical technicians are considered to be the professional staff.	(6 marks)
-------------	---	------------------

Examiner's
use only

End of questions for this paper

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 once more, 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.