Chartered Trading Standards Institute qualifications

Qualification Framework
written examination

Unit 4: Weights and Measures

May 2026

Guidance for this examination

Please ensure that you indicate clearly at the top of the answer booklet, the law viewpoint from which you will be answering: English, Scottish or Welsh.

The examiners may expect candidates to show knowledge of legislation which is in place but not in force (i.e. has been enacted) and regulations which have been made but are not yet in force, if they are directly relevant to the subject-matter of the examination.

Examination structure

There are two sections to the examination paper:

Section A Consists of six questions.
Candidates should attempt to answer three questions.
Total allocation of marks is 30 marks.
Suggested time allocation is 30 minutes.

Section B Consists of four questions.
Candidates should attempt to answer two questions.
Total allocation of marks is 70 marks.
Suggested time allocation is 90 minutes.

Total time allowed – two hours (plus ten minutes' reading time).

Note:

The Weights and Measures paper is a **closed book**; no materials are permitted to be taken into the examination room.

*The examination paper has **five** pages, including this front sheet.*

Section A
Candidates should attempt to answer three questions.
Each question carries 10 marks.
Total: 30 marks.

1. There are five extensions in the WELMEC Guide 7.2.

   Briefly explain what they are.

(10 marks)

2. Briefly explain why the location at which a Non-Automatic Weighing Instrument is used, may affect its accuracy.

(10 marks)

3. Briefly explain the term 'Module B' as it is used in the Non-Automatic Weighing Instruments Regulations 2016 and the Measuring Instruments Regulations 2016.

   Contrast this with 'Module D' in the same regulations.

(10 marks)

4. Briefly explain the term "placing on the market".

   Contrast this with the term "putting into use".

(10 marks)

5. What is an Automatic Rail-Weighbridge? Describe the two main designs.

(10 marks)

6. Explain the substitution of standard weights at verification, and when and how it could be used.

(10 marks)

Section A total of 30 marks.

End of Section A.

Section B
Candidates should attempt to answer two questions.
Each question carries 35 marks.
Total: 70 marks.

7. **Answer both parts of the question.**

(a) Explain the requirements relating to the marking of pre-packages under the Packaged Goods Regulations 2006.

How would they differ in their application to:

- A 300g pre-package of "e" marked potato crisps?
- A 300g pre-package of computer screen cleaner?
- An "e" marked 300g pre-package of tuna in brine?

(25 marks)

(b) Explain the relevant procedures relating to carrying out a reference test on the tuna in brine.

(10 marks)
(Total: 35 marks)

8. **Answer all parts of the question.**

You are an Inspector of Weights and Measures working for a local weights and measures authority in Great Britain. The authority is not an approved body. The authority has recently received a complaint regarding an itinerant trader specialising in the sale of precious stones and pearls. You attend a local village hall and discover the trader is using a non-automatic weighing instrument.

You inspect the instrument and see that it has a UKCA mark and other relevant legal metrology markings that show compliance with the Non-Automatic Weighing Instruments Regulations 2016 (as amended).

(a) List seven of the markings and inscriptions (other than the UKCA mark) that you would expect on the instrument.

(7 marks)

(b) The trader has the opportunity to carry out business in Northern Ireland. What advice would you give him with regard to the use of his weighing instrument?

(3 marks)

Your authority has a policy that all weighing instruments should be inspected in the same way as an initial conformity assessment.

(c) Explain in detail the metrological assessments and tests you would carry out to ensure that the instrument is compliant with the Non-Automatic Weighing Instrument Regulations 2016 (as amended) and how you would calculate the errors.

What would the maximum permitted errors be? For the purposes of this question, the instrument does not have an auxiliary indication.

(15 marks)

Question 8 continues over the next page

Section B continues over the page.

(d) After testing the instrument, you note that the maximum error is +5 divisions. What actions could you take immediately? Explain your answer.

(5 marks)

(e) If you disqualified the instrument, explain what actions the trader would need to take to bring it back into compliance.

(5 marks)
(Total: 35 marks)

9. **Answer all parts of the question.**

You are doing an inspection of a local fuel station. You undertake a physical inspection of the measuring instrument and note the various parts.

(a) Explain the function of the pulser, detailing briefly how it works.

(6 marks)

(b) Outline the legislative requirements for the working standard capacity measures that you have taken with you.

(5 marks)

(c) What physical tests would you undertake when testing the accuracy of the meter?

(6 marks)

(d) You dispense a 20-litre measure and note that the delivered quantity is 300ml less than indicated. What actions could you take?

(6 marks)

Upon further investigation you decide to interrogate the checksum of the instrument and note that it is different to the one indicated in the type-examination certificate.

(e) Explain what is meant by a checksum and contrast this with a version number.

(6 marks)

(f) With reference to the essential requirements of the Measuring Instruments Regulations 2016 and the WELMEC Guide 7.2, explain why software identification is important.

(6 marks)
(Total: 35 marks)

Section B continues over the page.

10. **Answer all parts of the question.**

Your local authority wishes to buy a weighing instrument that can be attached to the rear of one of their refuse collection vehicles. This will be used to charge local businesses for the amount of waste that is collected. They want the process to be fully automatic with the weight data being automatically sent to the council office from the weighing system. At the council office, the invoice will be calculated and e-mailed to the customer.

You have been approached to give advice on the legal requirements of the instrument the local authority is intending to purchase.

(a) With reference to the Measuring Instruments Regulations 2016 (as amended), briefly outline the requirements that would apply to the automatic weighing instrument.

(5 marks)

(b) Outline the process you would undertake if you were asked to initially conformity assess this instrument.

(10 marks)

(c) With reference to the relevant normative document, comment on the test loads you would use and how you would determine their accuracy if you were asked to initially conformity assess this instrument.

(5 marks)

(d) Outline the legal metrology requirements that would apply to the transfer of weight data from the weighing instruments to the Council computer systems where the invoicing would be completed.

(10 marks)

(e) What type of security sealing would you expect to see in this situation?

(5 marks)
(Total: 35 marks)

Section B total of 70 marks.

END OF EXAMINATION PAPER.