

Examiner's report

CTSI Professional Competency Framework

Stage 2: Weights and Measures Practical Examiner's Report May 2022

The practical exam was sat by 15 candidates this year. The pass rate was 66%. The exam consisted of 2 practical questions and 2 scenario questions. Each question was worth 25 marks and, on average, the practical questions were answered better than the scenarios. Two papers were used this year.

Scenario Paper A – NAWI and Bulk Fuel

NAWI

The NAWI question concerned initial verification. Information to be gathered should include name and address of submitter, PO number, and where invoice is to be sent. No one said the last part. Change point weights were missed in the list of equipment. The question stated that the error at zero was 0.1e, but almost all candidates read this as 0.1g. There was a table to be completed, but no candidate got this completely correct. Graphs, where produced, were generally of a high standard. On the whole the results from this question propped up the results for the second scenario question on bulk fuel. Average mark for this question was 15 out of 25.

Bulk Fuel

The table of results was generally poorly completed – only one candidate got it correct. Marks lost by some candidates for stating they would apply a Notified body sticker, not Approved body and CE marking was mentioned. Tests should always include conformity with the Type Examination Certificate (TEC) and visual checks. Few people mentioned that they would bring a calibration chart for their reference meter. No one said which section of the TEC contained the sealing arrangements. Average mark was 9 out of 25.

Scenario Paper B – Automatic Gravimetric Filling Instrument and Bulk Fuel

AGFI

The scenario on automatic gravimetric filling instruments was the most poorly answered question of all with two candidates only scoring 2 marks. The highest mark was 10. Only one candidate came close to completing the table of results. No one managed to complete it in full. Reference accuracy class was not understood by any candidate. Only one candidate said they would bring a control instrument. Another candidate said they would use a weighbridge. Candidates should familiarise themselves with the Expert Panel test forms and work instructions held in the library of the local government metrology group on the Khub. This question was poorly answered. Average mark was 8 out of 25.

Bulk Fuel

As above.

Practical Paper A – Mass Comparator/Working Standard Weight and Gravimetric

Mass Comparator/WS Weight

Some candidates tested the comparator, but didn't go on to test the weight losing marks in the process. One candidate produced accurate results for the comparator and described what they would do with the figures i.e., calculate the standard deviation. Time would have been better spent (and marks awarded for) actually doing the calculation rather than talking about doing it. Some candidates were switching between grams and milligrams in the same calculation and got confused in the process. Methodologies were not very well described. Average mark was 14 out of 25.

Gravimetric (Pipette)

One candidate scored a near perfect 23 out of 25 and one candidate clearly did not stick to the advice on spending 30 minutes per question and ran out of time to provide any real answer so scored only 2 marks. Most gave the limit of error for a local standard, not a working standard as was asked in the question leading to an incorrect conclusion. Overall not very well answered. Average mark was 10 out of 25.

Practical Paper B – NAWI and Density (Line Marked Bottle)

NAWI

Identification of equipment was an issue. Candidates should demonstrate a systematic approach to this. Traceability in legal metrology is vital. Tables of results were not clearly set out and hardly any candidate managed to draw a graph of linearity and hysteresis. Testing a NAWI is essential knowledge for an inspector of weights and measures so candidates should always be prepared to receive a question on it. It is likely to appear in either the scenario or practical paper. Average mark was a disappointing 11 out of 25.

Density (Line Marked Bottle)

Generally, a well answered question. One candidate thankfully did very well on this one and received 22 marks which took them just above the pass mark for the exam overall. Candidates should remember to identify the product's batch code or best before. Average mark for this question was 16 out of 25.

General

Good time management is key for successful results in this exam. There are two questions to be completed in an hour and keeping to a 50/50 split is crucial. Keeping to this timing ensures that maximum marks can be obtained. Candidates are asked to state whether an instrument passes or fails and in some instances are asked what paperwork would be issued. Often candidates hedge their bets and explain what would be done in the event of a pass and a failure.

A better strategy is to make a decision based on the results achieved. Candidates were confused over CE marking and UKCA and did not know whose responsibility it is to apply which marks to instruments. Results should be clearly set out and easily legible.

The answer booklet contains many pages so there is no need to squash everything on to only one or two pages.

Thorough completion of the portfolio, and practice, is essential preparation for this exam.