



External Assessment Report 2010

Subject	Electrical Installation Fundamentals
Level	Intermediate 2

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the Examination.

Comments on candidate performance

General comments

There were 43 entries for the summer diet of the Electrical Installation Fundamentals Intermediate 2 project compared with 41 in 2009. There were also 11 entries earlier in 2010. Two new centres submitted entries for the 2010 summer diet.

A pass mark meeting was held in 2010 for the Electrical Installation Fundamentals Intermediate 2 award. The overall pass rate for the 2010 summer diet of candidates was 73.5% compared with 63.4% in 2009. The mean mark in 2010 was 119 (the total mark for the project is out of 200) compared with 98.5 in 2009.

In 2010, 18.6% of candidates achieved the standard for Grade A in the external assessment, 23.3% achieved the standard for Grade B, and 44.1 % achieved the standard for Grade C. The corresponding figures for 2009 were as follows: Grade A — 15%, Grade B — 40% and Grade C — 10%. A comparison of the 2010 and 2009 figures indicates that while the number of candidates achieving the standard for Grade A in 2010 rose, far more candidates achieved the standard for Grade C rather than a Grade B in 2010. Those markers externally marking the 2010 candidate projects noted the continuing tendency on the part of lecturers to mark candidate work too generously when internally marking projects in centres. It was also noted that some centres' marking schemes did not set out clearly enough how marks were awarded to different sections of the project work.

Note that the discrepancy between the above figures and the final table arises because some candidates had still to achieve or be resulted for individual Units.

The average scores in each of the three stages of the project were as follows: Planning — 24.2/40 Development — 75.3/120 and Evaluation — 19.5/40. A comparison with the previous three years' average marks reveals that the average mark for the Planning stage was at its highest level; the average mark for the Development stage had returned to almost its highest level achieved; and the average mark for Evaluation, although still below 50% of the total mark for this stage, was at its highest level at 19.5. The increase in all three sets of average marks indicate that centres are increasingly becoming aware of the requirements of the project work and are communicating these requirements more effectively to candidates. It does have to be noted, however, that while there has been a steady improvement in the average mark for the Evaluation stage over the last four years it remains the weakest section of the project.

The standard of English in reports continues to improve although there is still scope for further improvement.

Areas in which candidates performed well

As noted in previous years, most candidates do the Development stage well. Candidates continue to identify the key hazards involved in undertaking the garage or workshop projects and steps to minimise these hazards. However, some candidates continue to fail to make an effective assessment of the relative risks of the hazards. Most candidates provide a

comprehensive stock list. It is pleasing to report that many candidates identified more electrical installation good practice points this year than in previous years. The testing part of the project is normally detailed with candidates giving accurate information on the expected results from various tests. However, some candidates do miss a test and/or get the sequence of tests in the wrong order. Most candidates provide detailed diagrams of earthing arrangements for the project they were doing although some do not detail the source of information for these arrangements.

In the Planning stage most candidates explained why they preferred to do the workshop project rather than the garage project and vice versa. However, in future it would be nice to read positive rather than negative reasons why candidates chose one project over the other (eg because I want to learn more about such and such). It is also apparent that candidates are being encouraged to use different sources of information, including the internet, when undertaking their projects.

In the Evaluation stage most candidates identify the technical skills they have developed while undertaking their project.

Areas which candidates found demanding

As in previous years, the project markers have identified various areas that candidates continue to find challenging. Some of these areas are shown below:

Planning stage

- 1 Most candidates do not define the aims and objectives of the project clearly.
- 2 Some candidates continue not to detail all the stages of the project (eg inspection and testing).
- 3 Most candidates are unrealistic in the timescales they present for the stages of the project.
- 4 Some candidates fail to include the mechanism they are going to use to monitor progress in the project.

Development stage

- 1 As mentioned in the previous section, some candidates continue not to make an effective risk assessment of the hazards they identify for the garage or workshop project.
- 2 Most candidates continue not to provide circuit diagrams for lighting and power circuits.

Evaluation stage

- 1 As in previous years, evaluations tend to be quite narrowly focused with candidates often repeating what they have done in the project. Candidates do not question the project planning sufficiently. For example, it appears that almost all projects go exactly to plan. There is little comment on how project planning and development can be improved. Most candidates focus heavily on how their technical skills have improved as a result of undertaking the project but fail to mention how other skills such as communication, health and safety, investigation, information technology, problem solving, and working with others have developed.

Advice to centres for preparation of future candidates

It is pleasing to report that centres continue to employ their own marking schemes when assessing candidate work. However, some centres should consider reviewing these marking schemes with a view to clarifying more precisely how they allocate marks to each stage of the project. Centres are referred to the Course Arrangements documentation to get further guidance on how to make their own marking schemes more precise and robust.

Centres should ensure that candidates include the aims and objectives of the workshop or garage project in the Planning stage. This should help in writing up the report in the Evaluation stage. Lecturers/teachers should also encourage candidates to include realistic estimates of the time each activity will take at the Planning stage. This would then allow candidates in their evaluation reports to compare these estimates with the actual times spent on activities. Centres should also get candidates to record progress throughout the project as this will help in the evaluation report. One centre has introduced a simple log book to record progress throughout the project.

As highlighted in previous years, centres should also get candidates not only to identify the nature of hazards associated with their projects but also to assess the level of risks associated with these hazards. This is important as it is the view of the Principal Assessor (PA) and his fellow external assessors that full risk assessment is not currently taking place in some centres. Candidates should also produce circuit diagrams, as well as wiring diagrams, for the lighting and power circuits.

While it is recognised that the Evaluation section is probably the most difficult part of the course to do, the PA believes that centres should challenge candidates more in terms of getting them to answer such questions as:

- ◆ How could the planning process be improved?
- ◆ How are you going to evaluate the success of your project?
- ◆ What additional knowledge and skills have you gained from doing the project (not just narrow technical skills but wider personal skills)?
- ◆ What other questions could have been asked at the planning stage?

Lecturers/teachers are encouraged to correct poor spelling and grammar.

Statistical information: update on Courses

Number of resulted entries in 2009	89
Number of resulted entries in 2010	68

Statistical information: performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark — 200				
A	4.4%	4.4%	3	140
B	35.3%	39.7%	24	120
C	33.8%	73.5%	23	100
D	4.4%	77.9%	3	90
No award	22.1%	100.0%	15	—

General commentary on grade boundaries

While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.

Each year, therefore, SQA holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Head of Service and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.

The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.

The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.

Where standards are comparable to previous years, similar grade boundaries are maintained.

An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in say Higher Chemistry this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions.

SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as Arrangements evolve and change.