

Moderators' Report/
Principal Moderator Feedback

Summer 2015

Pearson Edexcel GCE in Engineering
Unit 6935_01
The Engineering Environment

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Most centres prepared the samples in advance of the deadline. Included in these were the associated documents, although, as in previous series, some centres did not include learner authentication statements or Mark Allocation Records. For the latter, some centres used a range of recording documents. The standard, approved document is available on the website for centres to use and should be the standard method of recording for this unit.

Best practice was observed when centres annotated the MAR form and the learner work. Some centres were thorough here, with some not annotating the learner work at all.

This year there were many centres that used local companies for the focus of the investigation. The resulting standard of work for this unit was generally better than the linked 6932 unit and the assessment by centres was also more accurate. A number of samples showed that a single visit or presentation was the method of research. Centres are encouraged to build stronger links with local companies in order to give the learners a sound opportunity to obtain all the information needed for this unit.

Assessment criterion (a)

Learners often provided a good range of standards, although regulations were sometimes weak or missed from this section. Some learners tended to focus on explaining and justification to try to get the higher marks, without considering the real purpose of the standard or regulation and how it impacted on the product. Common across the samples were H&S, RIDOR and COSSH.

Assessment criterion (b)

A range of documents were seen across the samples. Some learners discussed at length the documents, but overlooked the clear link to the product. Others focussed on H&S documents only and did not consider engineering or working drawings, job schedules and process records. The best examples within the samples were annotated screen shots or scanned documents that explained the purpose clearly and for some, justified why they were used. Learners should be encouraged to show the document and

be confident enough to annotate them to identify key features. However, the inclusion of these as extensive appendix entries is unnecessary.

Assessment criterion (c)

A common theme across this criterion was electrical energy. This was often simply expressed as heating and lighting. Many learners overlooked the energy implications for the production system, although there were some samples that described how a particular process was monitored and controlled in order to maximise the efficiency. For this criterion this is important, and learners should be encouraged to consider energy issues other than low energy light bulbs and heating. In the main, learners performed well, with most achieving MB2. What lacked, as in other sections, was the justification of the energy efficiency measures taken. Learners should investigate the energy issues, considering these from the company perspective, rather than simply identify and describe them, in order to meet the higher mark band criteria.

Assessment criterion (d)

Environmental concerns were normally well covered, although, in some instances, similar across the samples. The general issues of emissions, noise, water pollution and the environmental impacts of these were common and appeared to be better understood. Recycling was also evident, but more of a procedure, than why it is necessary as a result of the effect on the environment. There was some documentary evidence where learners provided useful examples of recording how some companies had reduced the waste, or recycled water for other purposes in an attempt to limit the effect on the environment. These were also useful to support the evidence in section (b).

Assessment criterion (e)

A good range of technologies was seen across the samples. The best examples included design and manufacture applications, such as CAD/CAM/CNC and process/control technologies. Learners also included communications technologies and those essential to the day to day running and organisation of the engineer. A number of learners focused only on communications and overlooked essential design and manufacturing technologies. In addition, it was seen that some learners included lengthy descriptions of smart materials and CNC systems, only to state that the engineer does not use them. It is essential in this section that the learner considers only the technologies used by the engineer, not those that may

be used should the product change. A number of learners described, at length, manual manufacturing or processing methods such as drilling, grinding and welding. These should be avoided in the technologies section. There were some learners achieving MB3 here, justifying the use of the technologies, however, in the main, the samples were MB2, with some generous assessment at the higher mark band.

QWC

The technologies section also provides opportunities for QWC. Assessors were identifying this and awarding marks appropriately. Across the samples, a range of specialist terms with good grammar and punctuation was observed.

Assessment criterion (f)

Most learners attempted to identify modifications for the product or service. As in 6932, modifications linked to the evaluations varied and some learners did not attempt this section. Assessors should ensure that all sections are attempted by the learner in order to complete the investigation. The mark bands allow basic modification responses and overall marks can be increased by this. A range of modifications were seen, some basic, including improving access, lighting and reducing energy and waste. Whilst these may be useful, the evidence was quite general and would need to show a real benefit to the product or company. Some of the better samples had clear evaluations of the product. In these, the modifications were well explained with useful diagrams to show how this could be achieved. The type of product investigated affected the modifications as in the linked unit. Again, complex, proven products will be difficult to modify, so engineer choice and access is important here. Centres should consider this when planning provision for this unit, in order to give learners the best opportunity of success.

Grade Boundaries

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<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

