edexcel

Moderators' Report/ Principal Moderator Feedback

June 2011

GCE Engineering

Unit 6932_01

The Role of the Engineer

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Moderators' Report that require the help of a subject specialist, you may find our **Ask The Expert** email service helpful.

Ask The Expert can be accessed online at the following link:
http://www.edexcel.com/Aboutus/contact-us/

June 2011
Publications Code UA027337

Unit 6932
The Role of the Engineer

A total of 48 centres are registered for this qualification and the cohort sizes range from a single candidate, but more usually of seven or eight, up to a few dozen. Similarly, the ability range varies and scores in the higher marks are increasing, suggesting that some centres have a well developed information and guidance system, and teachers and resources are developing, as are links with industry and real engineers.

Apart from a very small number, centres managed to send their moderation samples before or on the deadline, including signed authentication sheets, OPTEMS or signed EDI printouts and the correctly selected sample of candidate portfolios. The majority are now submitting work in the required format – being A4 paper, word processed and held together using a single treasury tag through the top left hand corner only.

A few candidates had written very little of their own work, but included massive amounts of printouts from industry or the internet. Although some of these candidates did make reference to the inclusions, it is only the work of the candidate which attracts marks. Candidates are required to describe, explain and justify the use of certain standards, etc, and if done well, there is no need to include a copy of the standard, etc, either within the work or in any appendices.

Many well produced and high scoring portfolios are now being seen, comprising between two and four pages for each of the six sections. Unfortunately, there are still some centres where candidates produce portfolios without page numbers, without section headings that reflect the six assessment criteria ‘a’ to ‘f’, and some that have eight or nine sections, with long histories of the company they have visited. All company history is interesting, but attracts no marks, so half a page of introduction is more than enough.

Most centres complete the mark record sheet (MRS), indicating the type of evidence and where it is located, by page number, but the most effective method of annotation is to also annotate the candidates’ work by writing the assessment verbs for each criterion alongside the relevant paragraphs – such as ‘MB2 explain’ or ‘MB3 justify’ to indicate exactly where the paragraphs are that deserve the marks awarded.

Where the centres went away from their school/college buildings and found a range of real engineers to investigate, the performance is understandably better. A very small number attempted to use the internet and/or imaginary engineers, made obvious by comments like ‘I would expect an engineer to do....’ etc, and their scores were generally low, and usually lower, following moderation.

Assessment Criteria (a)

Candidates who made contact with an engineer and identified the activities s/he carried out, usually provided better reports than those who went with a questionnaire which attempted to target the specification, but mostly failed to do so. Where the engineer's involvement with products is investigated, better results are generally found than with those providing a service. Design engineers are generally providing a service and working with them can present difficulties throughout the unit due to the limitation of their work range, or the candidates' lack of experience.

As in previous series, where description and justification for the tasks carried out by their engineer is required, some candidates wrote down everything they did in a typical day, which didn't work particularly well. Some followed a product from start to finish, which involved a range of engineers and they too missed some areas of the assessment criteria. Some candidates have been working closely with their own engineer on work experience or regular visits and these generally tend to perform better across the mark bands than those who all visit, or are visited by, one engineer who tells them of their work. The former leads to thorough portfolios, but the latter tends to lead to a set of portfolios which are all very similar.

Assessment Criteria (b)

Technologies – for this section, many candidates continue to interpret 'technologies' as machines, or CAD. These are only part of it – as indicated in the specification. Most include some kind of CAD use and several referred to CAM and a range of 'machine operations' such as turning, drilling and milling. Communications and control systems, for engineering processes and of engineering operations, services, record keeping, monitoring, etc, all make use of technologies across many areas of engineering and tend not to be included in the majority of reports.

Assessment Criteria (c)

Some candidates did very well with this section, but they were the minority. As in previous years, 'c' and 'd' have been overlapped and confused by several candidates, and the moderators are flexible with this, and allocate marks for the contents, even if in the wrong section. Some candidates gave a good range of standards, BS and CE, ISOs, etc, and the legislation for the environmental impact reduction, clean air act, etc, were thoroughly covered by some, as this is becoming more general knowledge across society than in specialist studies.

Many candidates described contents of certain legislation or standard, without identifying what the legislation or standard was. This is usually evident across portfolios in relation to PPE and risk assessment. There were examples of contract law and rights of employees. Non compliance was discussed by some candidates and high marks were achieved, but most didn't. Standards tended to be general and their relevance to the product not clearly stated. Few included how the engineer ensured the standards were met, with many candidates saying, simply, 'because they have to', or similar, without saying what they actually do.

Assessment Criteria (d)

The HASAW, Act 1974, etc tended to appear regularly. Not much evidence was seen in the higher mark bands and in the main the descriptions were quite general and not related to the engineer and the product/service. Much seemed to come from copies of employers' handouts or website research, and the relevance to the product was unclear.

Several candidates did, however, perform quite well with this section, but many are still not reading the criterion. 'Identify' suggests that the health and safety standard, or associated legislation, should have a name, but many referred to 'risk assessments' without mentioning the acts or regulations which require them to be done, such as the Management of Health and Safety at Work Regulations or PUWER and the rest of the 'Six-Pack' and its subsequent updates. The way companies interpret these to develop their own 'standards of working' are the expectation for this criterion, but they are rarely covered in any detail.

Assessment Criteria (e)

If the product/service is not accessible enough for the candidates to evaluate and criticise effectively, then the product or service is not suitable for this assessment purpose. This needs establishing very early on in their studies to save hours of research and writing. Some candidates incorrectly wrote lengthy appraisal reports about the whole company. Candidates must be reminded that the subject is engineering, and their focus must be on the role of a particular engineer and the work s/he carries out, reflecting the title of this unit – 'the role of the engineer'. Inappropriate choice of engineer and product/service meant that some of the evaluations were difficult to produce. Often the statements were simple and many assessors had marked this section leniently.

Assessment Criteria (f)

Following on from the evaluations, the modifications were quite simplistic in most samples, but this is a high level skill, and needs a good section 'e' to allow effective suggestions for improvement to be made. Very few candidates include diagrams to help with their explanations or ideas. Many suggestions were unrelated to section 'e' or contained trivial comments only, such as 'use low energy light bulbs' or 'employ more helpers'.

A range of Professional Development and INSET training is available and sessions on assessment, delivery, improvements to grades, etc, are attended by small numbers. Bespoke training can also be obtained by contacting Edexcel – using the details available on the website, or by contacting your regional office. Ask the Expert is also proving useful if a tutor has a query about the interpretation of the specifications or a candidate's suggested engineer and product or service. Details are on the website.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

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

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com

Order Code UA027337 June 2011

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Rewarding Learning