



**General Certificate of Secondary Education
June 2011**

Engineering (Double Award) 48501

(Specification 4850)

Unit 1: External Assessment

Report on the Exam

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General

This was the second year in which this examination has been set, but a much greater number of candidates took the examination in 2011 than in 2010. In general, candidates' responses to the questions on the paper were good, although some areas such as sketching skills and the understanding of technical drawings are areas for improvement for future examinations. There were also indications that some centres had not read either the Preparation Sheet or the information in the specification closely enough and mistakenly believed that all of the questions on the paper would relate to the Research Context provided on the Preparation Sheet. The question paper tests all of the content of Unit 1 in the specification and the Research Context provides a method by which knowledge and understanding of the Unit Content will be tested in some of the questions.

1 (a) This was generally a reasonably well answered question, with responses showing a wide variation of understanding. Scores ranging from the maximum mark downwards were seen by the examiners, with very few candidates failing to score at all.

1 (b)(i) A good proportion of the candidates recognised casting and a suitable material, although many candidates gave other materials which were not suitable.

1 (b)(ii) Those candidates who failed to recognise the material in 1 (b)(i) were not penalised for describing properties relating to their previous answer. A good set of answers were seen here.

1 (b)(iii) Generally well done by the majority of candidates, although many thought four legs would automatically make for a more stable structure than three, without providing sufficient explanation as to their ideas. Disadvantages were picked up but solutions not always well considered or described. Credit was given if the principle was sound.

1 (c) This was a well answered question, with maximum scores not unusual. This was the question in which Quality of Written Communication was also assessed and the quality of responses in terms of this was better in 2011 than in the equivalent question in 2010.

1 (d) The quality of sketching seen in response to this question ranged from poor to of a very high quality. Marks were awarded for content and functionality and most candidates scored more than half of the available mark total.

2 (a) Question 2 (a) was tackled well in general, although some features appeared under both the headings of 'easy to use' and 'safety' without the candidate explaining the different points sufficiently well. Reasonable answers backed up with reasonable explanations were, however, rewarded.

2 (b) A number of candidates struggled with this question, with a number being averse to modify the supplied drawing, preferring to re-draw from scratch, with variable results. Some candidates thought that the projection symbol was some sort of fixing device and incorporated it into their answers, indicating that they did not know what it meant. A significant number of candidates were unable to distinguish between a nut and a bolt.

3 (a) Some candidates maintained the concept of casting for this question but as **Figure 3** said it is 'fabricated' from mild (low carbon) steel, their answers were disallowed. If a correct process was provided in such an answer it was rewarded.

3 (b)(i) Was well done, with both modern and traditional techniques successfully tendered.

3 (b)(ii) This was also well answered by the cohort.

3 (b)(iii) A wide range of methods were successfully offered here, but answers involving heat were not rewarded.

- 3 (c)** Another well answered question, although some candidates did not seem to understand what the phrase 'heat proof' meant.
- 4 (a)** This question was not well answered. Many candidates made no attempt to answer this and of those who did, a significant number demonstrated of orthographic projection beyond applying dimensions. Few candidates attempted to include a hatched cross sectional view.
- 4 (b)** This question was reasonably well answered by the cohort, although some candidates did waste time by writing out the information in the boxes in full, rather than simply including the code letter as instructed.
- 5 (a)(i) to (iii)** This question asked for candidates to identify three electronic components, including a resistor, each of which was worth one mark. This was not well answered and suggests an area in which candidate knowledge and understanding could be improved.
- 5 (b)** Some excellent and ingenious responses were seen to 5 (b). A few candidates offered 'smart material' answers such as thermochromic plastics; these gained recognition although technically not suitable for the given circuit.
- 6** Generally a good response was seen in most answers, though most candidates were weak on recognising the Stages of Production. However the explanations recording the changes made were, in the majority of cases, sound and perceptive.

Mark Ranges and Award of Grades

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