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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Engineering 48501

Report on the Examination

2010 examination – June series

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General

This was the first occasion upon which an examination for the new GCSE Engineering examination has been available to candidates and centres should be congratulated for the quality of the level of response seen.

1 (a) – This was well answered across the board. Almost all candidates attempted the question and most scored well, identifying what each part did, although sometimes they did so by a roundabout description.

1 (b) – Again, most candidates attempted this question and tackled it well. Where candidates failed to gain marks, it was due to them duplicating the choice of materials, but sound reasons for choice not repeated elsewhere were accepted.

1 (c) – The Principal Examiner was impressed by the range of answers & the accuracy of the descriptions in some of the answers. The sketches ranged from excellent to merely being identifiable, but the vast majority were capable of imparting information.

1 (d) – Candidates managed to identify and label a rudder and tiller system successfully. Some candidates failed to understand what a “water line” is, while others positioned rudder blades within the hull, but again the question was generally well answered, some candidates offering much more information than was needed. Centres are advised to continue to train candidates on examination technique, including the required amount of detail required for each question and on the importance of candidates making an attempt at all questions.

1 (e) – Some candidates gained full marks here and provided excellent logical answers in well assembled sentences. More candidates managed to produce answers which were logical and broadly correct technically, but which were let down by punctuation errors or the complete lack of sentence use. Many candidates, however, seemed to have disregarded the set question: it is vital that candidates answer the actual question set.

2 (a) – The majority of candidates successfully identified a wide range of hazards, although some of the explanations tended towards the melodramatic. Nonetheless, some candidates produced excellent answers and scored highly. A number of other candidates, however, seemed to know little about corrosion other than that the word itself existed. It is important that candidates are aware of the meaning and context of technical terms.

2 (b) – Many candidates ignored the role of the designer in this part of the question and suggested solutions which the designer could have no control over. Some candidates provided excellent answers to this question and scored accordingly.

3 (a)(i) – Generally well done, with most candidates identifying a suitable manufacturing process; the favourites were injection moulding, vacuum forming, blow moulding and rotation moulding (very popular).

3 (a)(ii) – Rotation moulding had been comprehensively revised and some highly detailed answers were given. Injection moulding, vacuum forming and GRP moulding answers were generally well executed. Some candidates attempted answers based on blow moulding, but did not then appear to understand the concept, judging by their responses.

3 (b) – A reasonably well answered question. Some answers were outstanding, showing good understanding of interlocking structures/mechanisms. Some more mundane answers were well sketched and explained.

3 (c) – Where candidates failed to gain a mark on this question, it was because they thought that the advantage of using a CNC machine was 'waterproofing'.

3 (d) – This was the worst attempted question on the paper, with many candidates not even attempting it. A few excellent answers were seen but the majority of responses could identify the start and the outcome, but were not able to provide the details in between. Very few could identify a cutting machine other than "a CNC cutter" as provided in the question.

4 (a) – Very few good answers were seen here, with technical drawing appearing to be an area which could be improved upon by candidates in the future.

4 (b) – The Principal Examiner was pleased to see so many candidates work out the right sequence, although it should also be noted that many ignored the letters which were provided in the paper, whilst others used a combination of letters and notes. Many full scores were achieved by candidates, though many other poor efforts were produced which appeared to be little more than guesswork.

5 (a) – This question was done quite well, although some candidates seemed to have the idea that bronze is cheap. Some confusion was evident between *corrosion resistant* and *waterproof*. Candidates identified working characteristics as being pertinent.

5 (b) – The majority of answers seen for this question were worth few or no marks. Some knew about callipers and verniers (digital & otherwise), but a lot of candidates suggested 'rulers' which, was not accepted. A few laser measuring devices were accepted.

5 (c) – Hazards were quite well identified. 'Gloves' proved to be a problem, with many candidates offering 'gloves' as a PPE for machining. Where the answer stated or implied gloves were for handling hot or sharp materials the response was rewarded. Where other hazards identified, the appropriate PPE was more straightforward.

6 (a) – Most responses identified the changes to the workforce successfully, although very few identified the changes to 'buying'. The great majority offered increase in prices and shortage of material resources, which was not allowed. A few offered full and relevant answers. More managed to gain a mark from identifying recycling as having some impact.

6 (b) – Most candidates managed to suggest that modern manufacturing methods provided a wider range of good at affordable prices and a reduction in manpower/skills or similar.

Mark Ranges and Award of Grades

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