GCSE

Manufacturing

General Certificate of Secondary Education **J505**

General Certificate of Secondary Education (Double Award) **J510**

OCR Report to Centres

January 2012

J505/J510/R/12J

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This report on the examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the examination.

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OCR REPORT TO CENTRES

Overview

Entries for the Controlled Assessment units were low this session, with only Unit B231 having candidates submit work for moderation. Centres are reminded that the focus of the work selected by candidates for Controlled Assessment units must be based on the lists provided in the OCR GCSE Manufacturing Specification.

Responses to questions in the Unit B232 paper indicated that candidates had generally been well prepared for the examinations, and it was encouraging to see the level of responses in many cases. The depth of knowledge in some areas of the specification remains rather weak in some cases however, details of which are given later in this report.

Most candidates attempted all of the questions on the paper but, in some cases, questions with no response indicated gaps in candidates' knowledge and understanding. There was some evidence of candidates not having read questions carefully before answering, and the importance of effective examination technique cannot be over-emphasised.

B231 Study of a Manufactured Product and Manufacturing a Product

Folders and Presentation of Candidate's Work

In general, the work provided by centres was well presented and carefully marked, and the detailed annotation was much appreciated by moderators. Where folders were clearly divided into sections, it was easy to determine how the centre had awarded their marks. It is clearly best practice to present folders in this way and all centres are urged to encourage candidates to do this.

Centres are also reminded of the OCR requirements when submitting work for moderation, especially the need to clearly identify each piece with Centre Number and Candidate Number. With electronic submissions, the details should be provided in the filename of every file.

Paper folders should have the pages securely fixed together and have a cover sheet attached. Centres should note that 'slide binders' should not be used as these frequently become detached in the post and do not keep the candidate's work together satisfactorily. If plastic wallets are used, it is important that only one sheet of paper is stored in each pocket. Further details of these requirements are found on page 36 of the OCR Manufacturing Specification (issue February 2010)

Centres are reminded that the purpose of the moderation portfolio is for the candidate to evidence theirachievement, and to communicate this achievement to the moderator and others. It is, therefore, helpful for each section to identify which part of the assessment criteria it is seeking to address. The comments provided by centres on the record of assessment form URS967/8 were helpful in explaining the reasons behind the marks awarded. Centres are reminded of the requirement to clearly attach this form to the front of the assessed work of each candidate.

General Issues and Recommendations

Centres are reminded that candidates cannot be awarded marks for work that is not covered by the current specification. The current specification includes notes of guidance for use of the 'Best Fit' approach to marking. This can be found on p36 and p37 of the Manufacturing Specification. Marking should be positive, rewarding achievement rather than penalising failure, and centres should adopt the approach described in the Specification on p37. Firstly, the descriptor that best describes the candidate's work should be identified. Then, a value judgement should be made as to whether the candidate 'convincingly', 'adequately' or 'just' met the criteria statements, and the mark adjusted up or down accordingly. This is the approach used by moderators when assessing evidence presented for moderation, and centres are encouraged to adopt a similar approach to their assessment of candidates' work.

In some cases, a candidate may meet the criteria at the top level for one aspect and, say, the lower level for another aspect. In these cases, the above process should be followed for each aspect, and the average of the two scores recorded as the candidate's mark. For example, if the work 'convincingly' met the criteria in the top box for 'suggested modifications' yet 'just' met the criteria for 'batch production' in the middle box, the overall mark would be the average of 12 and 5, in other words 8 or 9.

Centres are reminded that the focus of the work selected by candidates for controlled assessment tasks must be based on the lists provided in the OCR Manufacturing Specification. Candidates must not submit work for assessment if it fails to meet this requirement.

Certain words are used frequently within the marking criteria. It is not possible to give precise guidance as to how words such as 'wide range' or 'justified ' should always be interpreted. The context and type of product must always be taken into account. If the evidence is presented as a simple list with no explanation, then there has clearly been no attempt at justification and the work should not be marked using a criteria block that refers to 'justified'. It is important to apply a 'sense check' to the amount of justification that can reasonably be expected for a particular product and this can, of course, vary from one product to another.

Issues and Recommendations Relating to Specific Sections

Unit B231: 1A - Study of a Manufactured Product

Centres are reminded that work for Unit B231 1A 'Study of a Manufactured Product' requires candidates to select a product from the list and then identify two further, similar products that have subsequently been developed using modern technology. There should be a discernible link between the three products and some evidence of how technology has enabled these developments, eg: improvements in plastics production enabling the material to be used to manufacture kettles which, in turn, enables more sophisticated shapes to be employed in kettle design. Centres are reminded that only one product from the list should be chosen.

Candidates should be careful to address the correct topic for each section. For example, where a section requires an explanation of the manufacturing processes used, few if any marks can be awarded for work that refers only to the materials and components used to make the product, however comprehensive and well presented the explanation is.

When assessing cases such as this, it is important to consider whether this work can be included for consideration under another section, eg: 'gives a basic explanation of the use of materials and components…' even if the candidate has included the work under a different, incorrect heading.

Unit B231: 1B - Manufacturing a Product

Centres must provide clear evidence for the making of a prototype of their design solution in Unit 231 1B. Best practice is to provide 3 or more photographs, taken from different angles and with enough detail to clearly show how complete the prototype is and also to give a clear indication of its quality. If the prototype contains several different parts, for example an electronic circuit and a casing, then photographs must clearly show both parts.

If a centre awards marks against the criterion statement 'The candidate makes a complete, quality prototype of the design solution that allows for detailed testing', moderators must be presented with enough evidence to determine that the work met this criterion, rather than that in one of the other blocks. It is very important that this aspect of the assessment is carried out correctly and it is encouraging to see centres now providing excellent photographic evidence.

It is hoped that these comments are of use to centres preparing candidates for future assessments. Centres are encouraged to constantly refer candidates to the assessment criteria and to encourage candidates to focus on this at all times.

B232 Manufacturing Processes

General comments

Most candidates attempted all of the questions on the paper but, in a few cases, questions with no response indicated gaps in candidates' knowledge of the specification content. There was some evidence of candidates not having read questions carefully before answering, resulting in an unnecessary loss of marks.

Detailed knowledge of the application of modern technologies was rather limited in many cases, as was a clear understanding of batch and large scale production.

1(a) Most candidates did well on this question. Candidates are expected to have a basic knowledge of all the manufacturing sectors, and products produced in each. In order to ensure clarity in candidates' responses, candidates should read through all of the products before starting to draw the links.

1(b) The majority of candidates were able to name a manufacturing sector not in the original list, and most scored well on this question. Where marks were lost, this was normally due to candidates repeating a sector from part (a), or only giving one example of a product from the sector named.

2(a) Drawing on their own experience, many candidates were able to identify a product and processes they used to make it. In a small number of cases, however, candidates lost marks by referring to tools rather than processes.

2(b) All candidates were able to give at least one tool used when making the product they had chosen, and the majority scored full marks on this part of the question.

2(c) This part of the question was less well answered than the others, with a number of candidates not able to give any appropriate quality control checks at all. Only the more able candidates scored full marks by giving two relevant checks.

2(d) The majority of candidates were able to give two safety precautions taken when making their chosen product, with references to PPE and the safe use of machines often being made. In a small number of cases, candidates lost a mark by only giving one relevant example.

3(a) & (b) Candidates' knowledge and understanding of prototyping has improved when compared with previous sessions, and many were able to identify the visual and practical benefits of making a prototype. Process validation is an area that was not particularly well covered in part **(a)** however, and some explanations of benefits in part **(b)** were rather weak, this being where most marks were lost.

4(a) Most candidates scored quite well on this question, but marks were often lost by candidates confusing traditional and modern methods.

4(b) This question was generally well answered, with reference to emails and video-conferencing often being made. Where marks were lost, this was normally as a result of a failure to make any comparison with traditional methods of communication.

5(a) The majority of candidates scored full marks on this question, with only a small number confusing the 'client brief' and 'presenting design ideas' stages in their response.

5(b)(i) Most candidates did well on this question, with many quoting the Internet as a useful way of carrying-out research. In some cases, however, lack of detail in the explanation caused marks to be lost, and only a limited number of candidates scored full marks.

(ii) This question was poorly answered, and many candidates either made no response at all or did not gain any marks for the answer they gave. Only a very limited number of candidates recognised the application of spreadsheets or JIT, and knowledge and understanding of production planning itself appeared to be very weak.

6(a) Almost all candidates recognised material E as being the safest to use, with only a very small number confusing the method of scaling the factors.

6(b) This question was generally well answered, with the availability and ease of storage being the most frequently quoted factors. Where the factors were given with little or no explanation, a maximum of two marks was allowed.

6(c) The majority of candidates attempted this question, but some gained no marks as they repeated a factor from the original table. Where an appropriate factor was given, this was often simply stated rather than described, and few candidates scored full marks on the question.

7(a) All candidates attempted this question, and most were able to give two materials or components used to make their chosen product.

7(b) A number of candidates appeared to be unaware of the meaning of a 'small batch', and a number offered no response to this question. Many responses simply named a process used, and less than half of the candidates gained full marks by giving an adequate description of the process.

7(c) Knowledge of large scale production seemed quite limited, and many responses consisted of rather simplistic references to the use of machines or computer control. Very few candidates were able to give a satisfactory explanation of how a process might be modified for large scale production.

8* Although most candidates attempted this question, responses were generally quite poor and, in many cases, candidates had not read the question carefully before answering. Most candidates made simple reference to one or two issues, with little or no mention of the implications of introducing modern materials into manufacturing.

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