

Examiner's Report

Principal Examiner Feedback

Summer 2018

Pearson Edexcel GCE Advances Subsidiary
In D&T: Graphic Products (6GR02/01)

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Introduction

It is clear that once again the majority of candidates prepared well for their examination and were able to demonstrate their knowledge and understanding well through their responses, be that in the form of written responses or annotated sketches.

Those candidates who read the question and respond with specifics relating to the topic of the question gain more marks than those who write around the subject with generic responses which have a vague link to the question topic.

In this series there were fewer candidates who responded to all questions with generic, generalised answers, such as 'strong, fast, quick, cheap' and so on.

Candidates need to know the information, and subject, which they are being questioned about and to organise this information effectively to answer the question set. As opposed to writing as much as possible in the space provided in an attempt to try to gain marks from their response, hoping that the answer provided meets some aspect of the mark scheme. Related to this, whilst it is clear that most candidates use the time in the exam well, some candidates still find the need to use additional pages to complete answers, even for question 7 where there were two pages available for the answer.

The quality of sketching was generally good with the vast majority of candidates being able to produce an isometric drawing of some form. Some candidates only provided limited labels for questions where annotated sketches were asked for which tended to limit the marks that were awarded. This will be exemplified in the main body of the report.

Question 1 (a)

This question was generally answered well by the majority of candidates. The most popular response being the reference to lightweight, rigidity or the good printing surface. Most points in the mark scheme were referenced at some stage; although only a very small minority of candidates provided responses that considered that the board is made from multiple layers.

Where candidates did not gain marks was when they provided answers such as 'can be bent'. Such answers were effectively repetition of the stem of the question.

Question 1 (b)

Most candidates responded with answers that attracted at least one mark. Popular and common responses included reference to being able to produce nets with repeated accuracy, further linking this to a reduction in human error. Candidates had a clear understanding of the benefits of using an industrial die cutting machine; although in a significant proportion of examples a lead point was stated, but not expanded upon. Centres are reminded that for explain questions one mark is awarded for a lead point and the second mark for a linked explanation.

Question 1 (c)

This question was answered well by the majority of candidates. Candidates frequently made reference to guarding, and how this prevents contact with the cutting blades. A significant proportion of candidates made reference to the use of emergency stops, whilst recognition of the use of two switches that need to be pressed simultaneously was less frequent. Only a small proportion of candidates considered the use of light sensors to make sure that nothing was blocking the line of cutting.

Question 1 (d)

Many candidates produced relatively accurate sketches of an industrial die cutter, with annotations to explain how it works. Where candidates failed to achieve the four marks available for the question this was for one of two reasons. First, they provided no annotations, or only very simplistic labels; second, they described the process of die cutting using 'craft' type equipment such as may be found in a class room or for small scale domestic die cutting.

Question 2 (a)

This topic area has been assessed on a number of occasions previously with many candidates being familiar with the concepts associated with phosphorescent pigments. In most cases candidates were able to achieve both of the marks that were available. Common answers related to the 'glow in the dark' property of the pigment and the possibility that the signs would still be

visible in a power cut, or the lack of a requirement for further illumination of the signs.

Question 2 (b)

Candidates were able to identify one property or quality of aluminium that made it suitable for the safety sign. In the majority of cases this was linked to either light weight or corrosion resistance. Whilst a significant number of candidates expanded upon their answer with an appropriate justification, there were nonetheless a small number of candidates who provided two low-level responses. Where candidates failed to achieve the marks available this was often as a result of stating that aluminium would not melt if there was a fire. This is not technically accurate, nor did it reflect the focus of the question.

Question 2 (c)

This question performed less well than many of the others on the paper, with candidates rarely achieving the four marks that were available. Commonly candidates made reference to flexography being suitable for a range of materials or that the inks were fast drying. These points were not however expanded upon thereby limiting the marks that could be awarded.

Question 3 (a)

Saddlewire stitching seemed to be a familiar process for the majority of candidates, many of whom scored high marks for this question. Candidates tended to focus on the key points that staples are passed through the fold, which allows the magazine to lie flat. This was often linked with comments related to it being a simple and low cost process to achieve the four marks that were awardable. In some cases candidates also made reference to the projected life spans of the magazines, and that saddlewire stitching provided adequate durability.

Question 3 (b)

As with Q3(a) candidates tended to provide good and thorough answers to this question. In the majority of cases candidates identified two reasons for coating paper; often these were to provide a smooth surface and to improve durability. In most instances these were then expanded upon, so that the second awardable mark for each response was also achieved. This question was generally answered well by the majority of candidates.

Question 3 (c)

Some candidates seemed to misinterpret this question to a degree. In a significant number of cases candidates wrote about the entire Fourdrinier process, rather than just the wet end section; in some cases, they even included reference to producing the pulp. There were some very succinct answers that achieved full marks, with candidates making sufficient reference to four aspects of the wet end section. Commonly they made reference to producing the slurry, this being held in a head box then passed through the slit on to the moving gauze bed. Some answers were extremely detailed and referenced 6 or 7 points from the mark scheme.

Question 4 (a)

As with Q1(d), many candidates produced relatively accurate annotated sketches to explain hot foil blocking. The reasons why candidates failed to achieve the four marks available for the question were that, either they provided no annotations or only very simplistic labels, or they described an unsuitable process.

Question 4 (b)

Candidates performed with success on this question. In the majority of cases they were able to identify two different methods of enhancing the packaging, in many cases these were also explained. Where candidates failed to achieve marks this was as a result of stating encapsulation, which would not be suitable for a package, or they stated very similar processes such as embossing and debossing.

Question 4 (c)

Candidates responded well to this question with a wide range of marks being awarded. Candidates provided answers that were appropriate for the given context, with many of the points from the mark scheme being included in some extended written answers. Common responses often made reference to the high quality printing surface; the rigidity and impact resistance of the material; and also the purity of the material.

Question 5 (a)

The use of laser cutters is an aspect of the specification that candidates often have first hand experience of. In this case many made reference to the lack of physical contact which provides a finished edge that needs no further work. A large number of candidates achieved 2 marks; however, there was a significant minority of candidates who answered with respect to the suitability of acrylic, rather than laser, cutting. Centres are reminded that it is important that candidates read questions fully and it is often good practice to underline key words.

Question 5 (b)

This question asked candidates to consider the advantages, and disadvantages, of using pine as the support structure for a point of sale display. Although a significant number of candidates performed well, there was some confusion about pine, with a large number stating that it is a hardwood. Many candidates did however recognise that pine has good structural strength, often expanding this to say that it was suitable to support the weight of the display.

Question 6 (a)

The majority of candidates attempted to produce an isometric drawing, although a significant proportion presented sketches that were oblique, axonometric or in perspective. Drawings similar to this were unable to achieve more than half marks. Other causes of candidates limiting their achievable marks included: failing to show the buttons; flash or lens projecting; omitting the inner lens; or not showing rounded corners. It was pleasing to see that most candidates attempted this question.

Question 6 (b)

Candidates seemed to be more familiar with aspects of quality control than quality assurance. However, providing both were included in the answer, candidates could access full marks. Many candidates achieved high marks with some detailed discussions of quality control methods, and how these are used as part of a quality assurance system. Those candidates who achieved lower marks often presented generic answers related to quality and, therefore, did not focus on either quality control, or quality assurance.

Question 7

The majority of candidates achieved good marks for this question. Candidates often made reference to first hand experience of using styrofoam for modelling, and were able to consider a wide range of advantages and disadvantages. Regarding rapid prototyping, many candidates referenced 3D printing, although stereolithography was included in some answers. This said, some candidates were unable to achieve high marks as they evaluated the use of virtual modelling, which was not the focus of the question.

Paper Summary

Based on their performance on this paper, candidates are offered the following advice:

- Read questions thoroughly so that you understand the focus of each specific question.
- Produce neat and well presented sketches and drawings which make good use of the space available.
- Annotate diagrams and sketches with detailed information which adds further depth to the response. Do not just label diagrams.
- Use the drafting skills which have been developed for internally assessed work to answer questions which involve sketching or drawing.
- Remember that an 'explain' question requires a valid point and a relevant and related justification or expansion for each valid point made.
- Remember that an 'evaluate' question must include references to both cases, be balanced, and offer a conclusion.
- Give answers which include only the information which is asked for and not everything you know about the subject.