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General Certificate of Secondary Education

Design and Technology (Graphic Products) 3543 Full Course

Higher Tier Written Paper

3543/H

Report on the Examination

2007 examination - June series

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General

- The paper was well received with no major problems regarding carrying design specification and generation of ideas over a number of question sheets.

- The slight change in format did not present any discernable problems. Future written paper will continue to follow the basic structure of a 'mini-project' but the positioning of a certain type of question may alter as the demands of the contexts and themes change.

- This year much attention was placed on justified reasoning; candidates were asked to explain the reasons for their choices. Many responses did not address this requirement and so full credit was seldom awarded.

- The Preparation Sheet had been used as intended and this benefited the majority of candidates. However, some candidates appeared to have only superficially studied the topics and did not investigate them fully within the context of the examination.

- Centres generally prepared candidates well for the designing questions and the quality of such work continues to impress the examiners. There were many excellent examples of generation of ideas and presentation drawings on the paper.

- One-word answers were rare in written responses but adequate when applied to a given table or chart.

Question 1 – Marketing and Product Analysis

This was the first time a range of items had been given and critical analysis required. It proved to be a well answered question allowing the majority of candidates to gain near maximum marks. The given illustrations were based on a range of popular mobile phones taken from a number of providers, likewise the function symbols could be found during research in catalogues available from large supermarket chains and specialist outlets.

This opening question provided the opportunity for the candidates to apply their basic analytical skills and benefit from their understanding of graphic imagery. In doing so it provided a degree of discrimination between candidates.

- Typical user/buyer
  Many candidates successfully identified a user of the given disposable phone. Popular responses included examples given in the question's rubric. A small minority offered a range of generalisations which did not meet the given criteria.

- Aesthetic features
  Most candidates followed the given example but customised their responses to suit the illustration, giving details of finish and form. Repeated identical descriptions were not rewarded unless specific differences were noted. A small number offered a written description of the illustration rather than a

critical observation of a feature. Unfortunately some candidates confused an aesthetic feature with a function.

- Function symbols
  The majority of candidates successfully recognised texting although it was rarely explained as a messaging utility. The musical ring tone symbol was slightly more problematical as it was frequently confused with the ability to play pop music tracks. The camera was universally recognised although some responses were more precise than the marking scheme. The next two symbols permitted some discrimination between the responses. There was some confusion with the ring tone symbol asked for earlier, but many candidates correctly described this symbol as the ability to play music files or to download music from the internet. The 'bluetooth' sign appeared to be well known amongst the candidates as evidenced from the large number of correct responses. The correct function of the '999' sign was not as obvious, as it was frequently taken out of the context of an emergency mobile phone. Too many candidates simply said that it was an emergency number rather than a 'speed dial' function key connecting directly to the emergency services. The loudspeaker symbol was familiar to most candidates. If described as an alarm function, marks were given.

Question 2 - Lighting Effects and Computer Aided Design

This question gave the opportunity for the candidates to demonstrate the graphic skill of colour rendering an outline drawing within a given context, and for them to show their understanding of a limited range of CAD icons. The icons presented were not intended to be program specific but rather generic signs which were either common across a wide range of CAD software or could be deduced from the given example.

(a) (i)   All candidates reproduced the given light source symbol somewhere in the drawing area.

   (ii)   The marking scheme permitted marks to be awarded for the effectiveness of the representation of the 3-D features, the embossing, the recessing etc as depicted by being in shadow, or by casting a shadow. This was well done by most candidates. The rendering of the phone's casing was expected to be compatible with the light source, if it was not full marks could not be awarded. For full marks it was expected that each face of the phone would be rendered with a degree of tonal variation sufficient to represent their position relative to the light source. This was well attempted with many impressive drawings. As befits the higher tier candidates there were hardly any poor attempts. Some candidates offered different faces in different primary colours. This did not detract from the awarded mark if the surfaces showed the intended tonal effect. The colour scheme was not judged just by the application of the colour.

(b)   The majority of candidates demonstrated an awareness of these basic CAD commands and could adequately describe their uses.

   (i)   Most candidates correctly deduced that this was a 'rotate' command, but some did not appreciate that its primary function was to turn through the selected object through 90 degrees rather than 'view from another angle'. Some suggested that it was for changing the layout of the paper between portrait and landscape. Both uses were fully rewarded.

(ii) The 'fill colour' icon was recognised by many although some thought it was a paint function. Discrimination arose when those who knew that it was for filling a given closed area or shape could be rewarded over those who suggested that it was simply for colouring a space.

The use of the sketching space appeared to have been appreciated by the candidates. The quality of the required drawing was better than in similar questions in recent years when no opportunity for experimentation was given. Nearly all the candidates successfully transferred their best image into the smaller space on the table. The printing icon was required to be in a similar style to the given examples and most were. Where 3D icons or icons not directly representing a stylised printer were offered, they were rewarded on merit with most scoring at least one mark.

Question 3 – Letter styles

Typography has been a design component in many recent written papers and was a feature of the Preparation Sheets. This question was intended to apply some structure to the design of a letter style which would benefit the candidate during the design stage. Most candidates responded well and many gained full marks.

(a) The majority of the candidates successfully identified the parts of the letters indicated. The terms used were, for the most part, self explanatory, the only major confusion was between 'continuous curve' as in a letter O, and the 'curve' as in the letter S. The naming of the 'serif' generally presented no problems.

(b) (i) All candidates produced a range of styles for the letter S, no other letters were offered and the given example was not copied. The quality of the responses varied greatly with strict criteria applied to judge their relative merits. Part (a) implied that the letters were created on a set of guide lines, hence the required styles were rewarded if it was evident that the given green grid lines had been used. The overall shape and style were then judged. Single line letters gained a single 'attempted' mark. Other responses were rewarded according to merit. Finally, the quality of the presentation, the line work and the neatness were assessed.

(ii) The preferred style was to be carried through to Question 5 and here the candidates were asked to explain why that particular letter style was chosen. It was hoped that the candidates would use some of the vocabulary highlighted in part (a) to justify their choice but few managed this. Full, reasoned, explanations for preference were rarer than expected on a higher tier paper. Marks were awarded as appropriate to the quality of explanation.

Question 4 – Development of ideas

This question, in its many forms, has been a feature of the written paper for many years and the candidates are familiar with many aspects of it, but this year very little development was evident despite the terms development and develop appearing a number of times on this page. Hence many marks were missed in part (b), often by the most able candidates.

(a)   This part was dedicated to the generation of ideas and was well done. Many candidates gained maximum marks for this formative designing stage. The quality of drawing was not directly assessed. It was sufficient if the sketches communicated the ideas, colour and reasons.

   (i) A wide range of images on the basic theme of 'emergency use' were offered by most candidates. The illustrations covered every conceivable situation from shark attacks to mishaps on mountains. The role of the emergency services was a popular interpretation. As long as the images could be understood as related to an emergency, credit was given. Some candidates, however, limited their ideas to variations of the word *emergency* and so did not gain full credit in this section.

   (ii) Colour was nearly always used or indicated. Labels, swatches and full colour were all evident in this ideas generation section.

   (iii) Giving an explanation of the ideas proved to be more taxing for candidates. Many candidates merely described what they had drawn rather than explain why it was appropriate to the situation.

(b) (i) and (ii)
   This part was concerned with taking an idea from part (a) and developing it into a final design. This was very poorly done with very few maximum marks gained. The majority of candidates were content to reproduce one idea and, at best, make very minor changes to it. The question asked the candidate to 'develop your best image' - few did, and marks were lost. A good answer should have shown several sketches progressively improving the initial idea.

   (iii) Evaluating the changes was also poorly done. As in part (a) many were content to describe the image rather than critically review the changes they had made in the refining of their design.

Question 5 – Layouts and Presentation Drawings

From the development stages on the previous pages the candidates were now asked to arrange their ideas in the form of a specification and produce a drawing of presentation quality. Many were successful and near maximum marks were gained.

(a)   **The Layout**
It was expected that the candidates would experiment with the positioning of the specification components in the spaces provided. It would have been sufficient to use simple labelled rectangles to indicate each component. However, many candidates produced full coloured detailed drawings, which at best, was self penalising as time was consumed doing that which was not requested. Others did not identify the specification items or even omitted them. A sizeable minority misread the instructions and dedicated each layout space to each separate specification component. Marks were awarded as the work fitted the question.

(b)   **The Presentation Drawing**
It was intended that the presentation drawing should be based on one of the layout arrangements and incorporate as given the candidates ideas from earlier questions. Most did this successfully but many did not use the

complete specification or for some reason changed the letter style. Also many candidates waste time by rendering the sides of the box rather than answering the question.

The line quality was good. Sharp pencil and graphic line markers were much in evidence and correctly used.

Colour was effectively used in almost every instance. Many excellent examples of the candidates' ability were displayed with higher level skill frequently evident.

(c)   This part had presented similar difficulties to other questions where an evaluation was required. Valuable marks were lost by not addressing the question. Candidates were asked to identify a feature of their design and explain how it could be further improved. Responses varied from purely descriptive to an inability to see anything that could benefit from additional modification. Marks were awarded according to the quality of the explanation.

Question 6 – British Standards and Printing Effects

This question was rarely well done. British Standards and knowledge of orthographic projection produced a wide range of responses, not always correct. An understanding of industrial printing effects was better demonstrated with most gaining some reward for their efforts.

(a)   This part divided the candidates. Some centres prepare their candidates well for this type of question as evidenced by whole groups scoring well, others less well prepared, rarely achieved any success.

 (i)   When attempted, not all candidates could correctly identify the plan from the given elevations. Because of the difficulty recognising the plan there were few correctly positioned and drawn end views, although many candidates had a vague idea of the requirements by using the key correctly.

 (ii)   Again there appeared to be division between whole centres producing correct dimensioning and hence scoring well and other centres where knowledge was, at best, sketchy.

(iii)   There were many correct responses of 1:2, and many more where it was not attempted at all.

(b)   The majority of candidates could correctly identify the abbreviations, U.V. as 'Ultra Violet' and many deduced the special features of spot varnishing that enabled it to enhance a graphic product. Marks were allocated according to evidence of their understanding.

Question 7 – Materials and Components.

This was a well answered question with many scores near the maximum.

(a)   The responses fell into two distinct categories - those using additional components such as disc magnets or *velcro*, and those with slits cut into the front panel and lid flap. Examiners were asked to judge and reward the feasibility of each response by asking the question – would it work irrespective of the method used? If it did, credit was given. Communication skills were then assessed as an informative diagram with adequate clear annotation. Many full marks were awarded.

(b)   Again there were many acceptable answers and high scores were common.

  Manufacturing Process: as a thermoplastic was given, vacuum forming and injection moulding were acceptable answers, with vacuum moulding by far the most popular.
  Biodegradable: classifying the materials presented no problems with many full marks earned.
  Source: here the primary source was required, thus 'oil', 'wood' and 'vegetable matter' were popular and were fully rewarded.
  Useful Property: for discrimination and accuracy, more than simple one word answers were expected, thus 'light' did not gain a reward whereas 'lightweight' or 'lighter than card' could be credited. A few candidates repeated the same property for each of the different materials and failed to gain maximum marks as the examiners could not fully judge their understanding of the material and its property.

Question 8 – Cultural, Social Issues and Environmental Issues

This was a well answered question with many high range marks being awarded. Successful candidates carefully read the question and addressed their responses to the context of the question. Weaker answers appeared to be based on first reactions and non-specific, general knowledge.

(a)   This was a popular question with many correct answers. Most could identify the two symbols, but then some then failed to give adequate environmental reasons why it should apply to the disposal of batteries.

(b)   Another popular question with good responses. It was aimed at interpreting a European Union eco-label and many candidates address these points in their answers.

  (i) The '€', the stars and the colour blue were recognised as connections with Europe and were rewarded accordingly. Some weaker candidates resorted to one word answers and so failed to give adequate reasoning. Marks were gained in relation to the fullness of answer.

  (ii) The flower was recognised as a symbol of the environment, of health and of growth. When explained full marks were credited.

  (iii) Again, the majority of candidates made the link between the colours, Europe and the environment.

(c)   Many good answers were evident. The designing space again worked in favour of the candidate. Almost all candidates experimented with ideas sketched here. The final idea was usually well drawn in the titled space. A clear symbol which communicated the desired 'wind-up' rotary motion gained credit depending on the effectiveness of the diagram. The rubric asked for a 'symbol in the style of those in Table 4', thus the examiners were looking for a symbol which was 2D, block coloured and without any words. Most complied and were rewarded accordingly.

Mark Ranges and Award of Grades

Please see the following link:

http://www.aqa.org.uk/over/stat.html