

Examiners' Report
June 2015

GCSE Design and Technology 5GR02 01

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June 2015

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Introduction

The paper this year followed the now very familiar structure which helped to facilitate access to candidates from across the ability range. Almost all candidates tended to perform better in questions which required them to recall knowledge and it is clear that they were well prepared in general. Candidates found questions which required them to expand upon their initial response more difficult and these tended to differentiate between stronger and weaker candidates.

Candidate performance within the extended answer questions appears to be improving and the provision of extra space helped to guide them into producing more appropriate levels of response.

Some candidates struggled to communicate effectively and it is important to encourage candidates to write clearly and legibly. While graphical communication is not assessed in the design question it is also important for candidates to be able to express their ideas and some were disadvantaged by poor communication skills. These questions often require them to 'show' their design decisions and frequently it is not appropriate to communicate these features through annotation alone.

Many candidates continued to rely upon generic terminology in response to some questions. It is advisable to encourage candidates to avoid the use of generic descriptors such as 'fast', 'strong' and 'cheap' wherever possible. Where candidates cannot think of an alternative it can sometimes help to qualify answers with a comparison for example.

Question 11 (a) (1)

Most candidates recognised that the scroll saw is used to cut materials but it was necessary to provide a little more detail as this information could be derived from the name given in the question. A significant number of candidates produced rather generalised answers in response to this question. In this type of question it is important for them to identify the specialist application of the tool or piece of equipment.

	Scroll saw	Cutting intricate shapes and curves into sheets of material (such as wood, plastic, or metal) (1)
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ResultsPlus

Examiner Comments

The question required candidates to make reference to cutting curves and /or sheet materials. In this example the candidate managed to provide both.



ResultsPlus

Examiner Tip

It is often important to identify specific applications when answering questions like this.

	Scroll saw	Cutting intricate shapes and curves into sheets of material (such as wood, plastic, or metal) (1)
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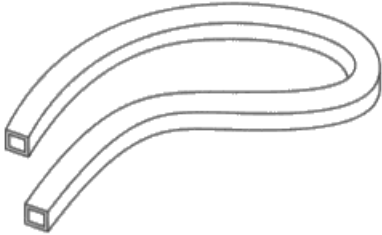
ResultsPlus

Examiner Comments

This also gained the mark.

Question 11 (a) (2)

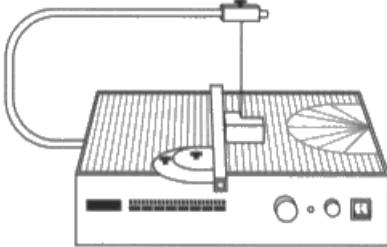
Many candidates failed to identify the Flexi Curve correctly, although many appeared to understand or guess its application. A significant number of responses identified it incorrectly as a French Curve. Some minor variations on spelling were accepted but answers such as 'Flexi Ruler' were not.


	Flexicurve	Used for drawing curves
	(1)	


 **ResultsPlus**
Examiner Comments
This response attracted 1 mark.

Question 11 (a) (3)

Although many candidates correctly identified the hot wire cutter, many referred to it as a saw. A significant number referred to it as a 'foam cutter' which simply regurgitated the terminology used in the question.


	Hot wire cutter	Used to cut/slice/burn through foam to make shapes
	(1)	

 **ResultsPlus**
Examiner Comments
The question was looking for
specific answers here.

 **ResultsPlus**
Examiner Tip
It is important to avoid repeating given
terminology in your answers where possible.

Question 11 (a) (4)

Nearly all candidates managed to identify the laser cutter although a small minority failed to digest the description and identified it as e.g. a printer or a shredder.

	Laser cutter.	Uses a beam of light to accurately cut and engrave non-metallic material (1)
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ResultsPlus
Examiner Comments

This response attracted 1 mark.



ResultsPlus
Examiner Tip

It is important to absorb and understand all the information provided within the question. Do not just look at the picture.

Question 11 (b) (i)

Although most candidates provided two answers, many were still relying on non-specific answers such as 'strong' and 'cheap'. Candidates who mentioned specific and technical material properties scored more highly here. 'Light' or 'light weight' were not accepted because alternative materials such as recycled pulp board tend to be lighter.

(i) Give **two** properties that make MDF suitable for jigsaw puzzles.

(2)

1 It is light weight.

2 Good strength.



ResultsPlus
Examiner Comments

This answer scored 0 marks because 'light weight' was not accepted and 'good strength' was not qualified by comparing it to an alternative material such as recycled pulp board, for example.



ResultsPlus
Examiner Tip

It is important to avoid generalised terminology and it is good practice to qualify answers where possible.

Question 11 (b) (ii)

This question was generally answered effectively with 'accurate' or 'precise' being the most common responses. However many candidates still resorted to generic terms. When speed was offered as a benefit it needed to be compared to another method.

(ii) Give **two** reasons why a laser cutter could be used to produce wooden jigsaw puzzles.

(2)

1 So that all the pieces fit perfectly together

2 Lazer cutting would be more accurate



ResultsPlus Examiner Comments

This answer scored 1 mark out of 2 because the same point has been repeated.



ResultsPlus Examiner Tip

Where possible it is good practice to qualify answers using an appropriate comparison.

Question 11 (b) (iii)

Most candidates referred to the burn marks created by the laser and succeeded in expanding upon this point by referring to the effect on the appearance of the puzzle pieces. Others identified the danger of fires and consequential damage to the laser cutter or puzzle. It was less common for responses which offered speed or cost as a disadvantage to achieve both marks

(iii) Describe **one** disadvantage of using a laser cutter when making wooden jigsaw puzzles.

(2)

The edges of the MDF will be ~~at~~ slightly burned, and may need sanding.



ResultsPlus Examiner Comments

This response attracts the full 2 marks because it describes how the laser produces burnt edges and then the candidate goes further to expand upon this by describing the consequence; namely that the edges then require an additional finishing process to clean them.



ResultsPlus Examiner Tip

In order to achieve 2 marks in this type of question you need to make an appropriate point and then you need to expand upon that point.

Question 11 (b) (iv)

If candidates knew about screen printing they tended to accumulate full marks and there were some very detailed and accurate responses. However many candidates seemed to be unable to describe this printing process and went on to describe another so their responses failed to attract any marks.

In screen printing, a stencil is made using the photo-emulsion technique for the negative areas. It is placed over mesh stretched over a wooden frame. The material (MDF) is then placed ~~over~~ under the screen and ink is applied. A squeegee spreads the ink out evenly onto the material and it is left to dry, then repeated with other colours.



ResultsPlus Examiner Comments

This is one example of a very good answer which attracts full marks. The candidate clearly understands the process.



ResultsPlus Examiner Tip

It is important to be able to describe all of the processes identified in the subject specification. You may need to reproduce diagrams and/or list the stages of a process. Make revision notes for all of these and practise reproducing them as part of your revision.

Question 11 (c)

This question was answered well by most candidates. A good range of answers from the mark scheme were given. Lower scoring responses were often characterised by short, single phrase answers which failed to 'describe' the benefits of using CAD. However the majority of candidates seemed to have a good understanding of the subject.

Candidates often referred to the fact that designs could be sent quickly to other designers/clients/manufacturers quickly but neglected to identify the specific mode of transfer. Some candidates claimed, incorrectly, that CAD eliminated errors/mistakes or was, in some way, 'easier' than designing by hand.

1. Designs ~~can~~ ^{can} be very easily changed so the whole design process becomes much ~~more~~ more responsive and quickly finished.

2. Designs can be quickly and easily sent to others electronically ~~so~~ so many people can edit and offer their input on them. ⁽⁴⁾



ResultsPlus Examiner Comments

This candidate produces a very succinct response which attracts all 4 marks because each point is expanded effectively.

1. It is reasonably cheap and doesn't use much energy, leaving it more efficient than other equipment.

2. It is reliable as it gives good accuracy leaving less time consumed.



ResultsPlus Examiner Comments

This response fails to attract any marks because the candidate has resorted to generic terminology and has made reference to benefits excluded in the questions stem.



ResultsPlus Examiner Tip

Read the question carefully so you do not waste time on answers which cannot be credited and avoid general terms such as 'cheap'.

Question 11 (d)

Most candidates referred to the decline in demand for operatives and skilled workers leading to redundancies and sometimes they went on to refer to the negative consequences of unemployment. However it was clear that a number of candidates had failed to recognise the focus of the question and talked in general terms about the disadvantages of CAM.

(d) Many products are now mass produced using CAM technology.

Explain **one** effect on the workforce of using CAM to manufacture products.

(2)

Due to the introduction of CAM that means that less workers are needed and as a result less jobs. This has an emotional strain on a workforce and general moral will go down.



ResultsPlus

Examiner Comments

This is a very thorough response to the question which refers to the fall in demand for workers leading to a shrinking workforce and the consequent emotional effects of this. In this case the responses have been credited using 2 separate marking scheme bullet points because the points made are valid and related. This response was awarded full marks.



ResultsPlus

Examiner Tip

If you have time you can always expand an answer by adding to it later, when you have finished. Leave time to check that you have answered all questions as fully as possible.

(d) Many products are now mass produced using CAM technology.

Explain **one** effect on the workforce of using CAM to manufacture products.

(2)

CAM is more efficient as it is quicker and more precise than if done by a person as well as can work for long hours non-stop unlike employees.



ResultsPlus

Examiner Comments

This response fails to focus upon the effects upon the workforce of using CAM although the employees are mentioned and fails to attract any marks as a result.



ResultsPlus

Examiner Tip

It is important to read the question.
Underlining/highlighting important words can help to emphasise the focus of the question.

Question 12

Almost every candidate was able to pick up marks here. There was evidence that some centres had been successful in training candidates to adopt a methodological approach within their answers. Many used ticks against the specification points on the previous page to ensure that they had applied each design criterion to each of their design solutions. A few went on to reference the specification by numbering each of their eight annotation points for each idea.

Most candidates attempted both design ideas and many succeeded in producing some creative and well-presented design concepts. However many others struggled to offer a technically different solution for many specification points within their alternative idea.

Whilst marks are not credited for the quality of graphical communication it is important for candidates to be able to show how they have satisfied the requirements of the specification. Annotation should be used to provide supporting evidence. While it was sufficient to identify features such as materials and manufacturing processes with a label, a response labelled as 'easily assembled', for example, could not attract the mark unless accompanied by a net or supplementary sketch showing assembly details. Candidates who scored highly often provided supplementary sketches to describe this and other aspects of their proposals.

'Hold six DVD cases and four Blu-ray cases'

It was important to show an appropriate method of holding here. Most candidates tended to suggest the use of shelves, slots, boxes or trays.

'Display the front cover for both formats clearly'

If the cases were held effectively candidates generally went on to orientate them successfully. The use of shallow trays, slots and clear acrylic holders were common solutions here.

'Allow easy removal and replacement of the cases'

Where removal methods were not self-evident candidates needed to provide additional details such as finger slots or dimensions to justify their idea.

'Be stable'

Most successful responses employed stands and large, flat bases as alternative solutions. However many employed the same technique for both of their ideas.

'Be easy to assemble'

Most responses failed to address this criterion satisfactorily. It was generally necessary for candidates to provide supplementary sketches in support of their proposals.

'Have a wildlife theme'

Almost every candidate successfully addressed this criterion. Images of wildlife habitat were accepted. However it was essential to draw the imagery. Simply applying the word 'wildlife' or annotation indicating placement could not be credited.

'Use a commercial method of manufacture'

It was important to refer to appropriate manufacturing methods used in industry, such as die-cutting. Many candidates ignored this point or repeated the same process in both designs. Laser cutting was a common suggestion.

'Be made from materials appropriate to this manufacturing method'

Most candidates managed to suggest a material but some still struggled to be specific, referring to general material groups such as wood or card. Most successful responses offered folding box board, solid white board, corrugated card, acrylic or MDF.

Question 13 (a)

There were many well justified responses given to this question. Most candidates recognised the fact that the material offered a good surface for printing and supported this point with appropriate justification. Lightweight as a property was also a frequent response and justifications generally focused upon customer benefits rather than the effect this would have on transport costs and related environmental benefits. Environmental issues were generally handled well as was the need for the material to be hygienic and inert.

Lower scoring responses tended to be those which either repeated the exclusions in the question stem, or which did not justify their answers fully. Weaker responses sometimes made an attempt to justify the property by repeating information which had already been established e.g. 'recyclable' followed by 'can be recycled'.

(a) Solid white board is easy to cut and fold.

Give **two** other properties of solid white board that make it a suitable material for a burger box.

For each property, justify your answer.

(4)

Property 1 Inert

Justification will not flavour ~~the~~ or contaminate
the food inside the box

Property 2 lightweight

Justification easy to carry and transport the
burger and easy to ship in bulk to the
burger store when mass produced.



ResultsPlus Examiner Comments

These responses attract full marks and demonstrate a good understanding of the question and an impressive awareness of user requirements and commercial issues. In this case 'light weight' has been accepted because it is a relevant material property which is essential to the effectiveness of the product.



ResultsPlus Examiner Tip

Wherever possible refer to a technical property.

(a) Solid white board is easy to cut and fold.

Give **two** other properties of solid white board that make it a suitable material for a burger box.

For each property, justify your answer.

(4)

Property 1 Inert

Justification will not flavour ~~the~~ or contaminate the food inside the box

Property 2 lightweight

Justification easy to carry and transport the burger and easy to ship in bulk to the burger store when mass produced.



ResultsPlus

Examiner Comments

This response fails to attract any marks. Solid white board would not be selected for its insulation properties as there are other materials which would be more effective. If the candidate had referenced the fact that solid white board is suitable for varnishing then it may have been possible to credit an answer which described how this would enhance its resistance to liquid penetration.



ResultsPlus

Examiner Tip

It is important to read the question carefully so you can avoid referring to excluded terms.

Question 13 (b)

It was recognised by most candidates that the supply of boxes was driven by consumer demand for takeaway burgers. However, in many cases, answers would have benefited with some expansion to justify why mass production is appropriate for a high demand product.

(b) Explain **one** reason why mass production is appropriate for producing burger boxes.

(2)

~~One~~ Tens of thousands of burger boxes are required. ~~There~~ They can only be used once so they are in high demand and need to be ~~be~~ manufactured on a very large scale. Every burger requires a new box so ~~so~~ lots need to be made because lots of people eat burgers.



ResultsPlus

Examiner Comments

This response recognises that there is a high demand for burger boxes because a high number of takeaway burgers are consumed and because the boxes are a one use product. In fact if only one of these justifications had been cited this candidate still would have achieved 2 marks.



ResultsPlus

Examiner Tip

Use connectives to expand your argument, e.g. 'so that,' 'because'.

(b) Explain **one** reason why mass production is appropriate for producing burger boxes.

(2)

~~It is a relative~~ It produces the box in large quantities, lowering the unit cost of each box.



ResultsPlus

Examiner Comments

This response only manages to attract one mark because the candidate failed to expand upon their initial point. If they had expanded their answer to explain how mass production lowered unit costs through investment in high capacity, automated machinery then the second mark could have been awarded.



ResultsPlus

Examiner Tip

The number of marks available for each question should be used as a guide for the number of points you need to make.

Question 13 (c) (i)

The majority of candidates recognised the need for interlocking hooks/tabs/slots to keep the box secure. Most responses were able to explain this effectively, but the descriptions from some candidates did little more than note the existence of the locking mechanism and required more detail in order to explain successfully how the locking mechanism worked. Very few candidates explored the fact that the hinge could be creased and folded into a one piece form which could be opened and closed.

(c) Explain why the solid white board burger box is successful at meeting the following specification points.

(i) Keeps the lid securely closed

(2)

There are two 'clips', which, when the lid is pushed down, clip onto the open slots in the lid and therefore prevent it opening back up. This acts as a sort of 'lock mechanism' in keeping the lid securely closed.



ResultsPlus
Examiner Comments

This response correctly identifies the two features of the mechanism and the fact that these interlock. 2 marks were awarded as a result.



ResultsPlus
Examiner Tip

It is important to expand your answer beyond a simple description of the diagram.

Question 13 (c) (ii)

A variety of responses demonstrated a good understanding of how the packaging could be used to present information to the customer, often referencing the large surface area available or the high quality print surface. Many candidates struggled to expand on this initial point in a way which avoided repeating the wording contained within the question. Many successful answers referenced specific information such as nutritional or allergy advice, or promotional features.

(ii) Gives information to the customer

Solid whiteboard can be printed onto,⁽²⁾
So any nutritional information can be
printed onto the box making the information
easily accessible to the customer



ResultsPlus Examiner Comments

This response identifies the suitability of solid white board for printing and goes on to provide a specific example of the information which could be applied to the box and communicated to the customer. As a result 2 marks were awarded.

miss
(ii) Gives information to the customer

the whiteboard can be printed on⁽²⁾
which in turn allows information to
be printed on it for the
customer



ResultsPlus Examiner Comments

This response successfully identifies the fact that solid white board is suitable for printing and goes on to explain that this will allow information to be applied to the box. However this answer fails to expand beyond details provided within the question. One way to do this would be to give examples of the type of information which could be applied such as ingredients and nutritional content. 1 mark was awarded.



ResultsPlus Examiner Tip

If you use words and phrases from the question you need to expand upon these.

Question 13 (d)

This question triggered a range of responses. Most candidates successfully addressed the areas of user requirements and environmental issues. Stronger, level 3, examples explored a range of issues and exhibited a sound understanding of the subject. Strong comparisons exhibited good subject knowledge and expanded to explain points effectively. For example moisture penetration issues were discussed and expanded to point out that the structure of the second box could be compromised by moisture from the burger or from external sources, while the EPS container provided better resistance to liquid penetration and exhibited insulating properties to keep the burger hot for longer, so customers were likely to be happier when they came to eat their product. Many weaker, level 1 and 2 responses, often concentrated upon features which they could see such as the closure mechanisms. Typically these responses went on to use generic terminology to describe functional properties which were difficult to justify. If points were expanded it was often only at a superficial level. The EPS container was often described as 'stronger' so 'less likely to break'.

Environmental issues were covered by almost all candidates and stronger responses, for example, went on to point out correctly that EPS is not widely recycled, is incinerated or ends up in landfill, resulting in emissions or non-compostable waste, with resultant effects on habitat and wildlife.

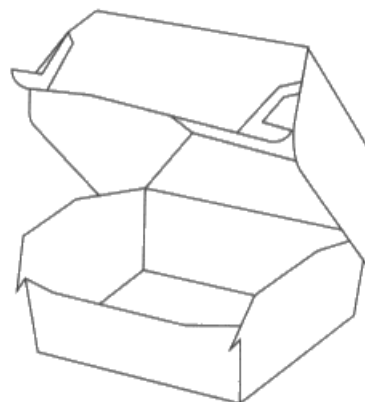
Candidates who submitted grids or lists often failed to provide effective expansion upon initial points. It should be noted that the question asks candidates to 'evaluate' and it was important to provide a comparative analysis. Many candidates tried to cover as many aspects as they could and this prevented them from discussing the issues in any depth. Higher scoring responses tended to focus on fewer areas and explored them in more detail, establishing links between related points. Issues of legibility were sometimes a concern and candidates should be reminded to communicate their ideas clearly and effectively.

***(d) The drawings below show two burger boxes.**



Polystyrene box

Box A



Cardboard box

Box B

Evaluate Box A and Box B in terms of user requirements and environmental impact.

(6)

~~A - flap hold rigid, insulates keeps warm, stronger B - flap hold not insulating, printed~~
~~not printing as well~~ ~~light weight~~ ~~widely recycled sustainable~~

Box A has a flap allowing the box to be kept securely shut to protect ^{the} food getting contaminated. Polystyrene is rigid and strong, so will hold the burger's weight. It is stronger than ~~with~~ ^{cardboard.} Polystyrene is insulating so will keep the burger/food warm for the consumption by the customer. It isn't as good a printing surface as Box B, although it can still be printed on, allowing attraction and a professional feel. Polystyrene is made from crude oil ~~so~~ ^{which} isn't renewable. The box isn't sustainable. Polystyrene is hard to recycle so it isn't recycled often, resulting in landfill and harming wildlife. The box is made for one-off use so should be recyclable.

Box B has flaps ~~is~~ ^{also} allowing the box to be kept securely shut to protect the food from contamination. It is rigid, but not as much as polystyrene, allowing the burger to be held securely. Cardboard is insulating, but less so than polystyrene. It will keep the burger warm ^{for a} short time though. Cardboard is an excellent printing surface, allowing graphics to ~~make~~ ^{make} the box attractive. Cardboard is recyclable ^{and} ~~isn't~~ sustainable as it is made from trees which can be planted. It reduces landfill and is environmentally friendly. ~~It is light~~. They are both lightweight so little fuel is needed to transport them.



ResultsPlus Examiner Comments

This level 3 response demonstrates a good understanding of the subject. The candidate uses technical vocabulary and provides a real comparative analysis. Points are expanded effectively and conclusions are drawn.



ResultsPlus Examiner Tip

Use spare space on the paper to plan your answer.

Evaluate Box A and Box B in terms of user requirements and environmental impact.

(6)

Polystyrene and card board are both impact resistant and non toxic.

Polystyrene is a plastic so it is water proof.

Card board is not water proof

Card board can tear easily and absorbs water causing the material to weaken.

Polystyrene is a thicker material ~~thicker~~ but it can crumble away easily.

Cardboard has good strength to weight ratio and so does polystyrene.

As polystyrene crumbles away there is a greater chance that it will be thrown away. Card board is stronger so it will be recycled more often

Polystyrene also insulates heat keeping the burger warm. Card board comes from trees which has an impact on the environment.

Overall polystyrene would be a better material because it is better for food packaging and it is water proof.



ResultsPlus

Examiner Comments

This is a good example of a level 2 response. Valid points are made and the candidate expands upon some of them but fails to push the comparison on to explore issues in more detail.



ResultsPlus

Examiner Tip

It is important to avoid writing a long list. You should try to expand upon your points using connective words and phrases.

Question 14 (a) (i)

Most candidates recognised the value of offset lithography for creating good quality prints on a large scale which improved the appearance and marketability of the product; however a number fell back on 'fast' and 'cheap'. These types of responses were improved by reasoned and justified expansions, by relating lithography to another process or by discussing the impact on unit costs. Many others correctly identified the high quality output of lithography but failed to expand upon their initial point.

(a) Offset lithography is to be used for the colour printing of the DVD paper insert.

(i) Explain **one** advantage of using offset lithography for printing.

(2)

It is easy and simple to use
offset lithography for printing.



ResultsPlus Examiner Comments

This response failed to attract any marks. Candidates should be discouraged from using unqualified and generic terminology.



ResultsPlus Examiner Tip

It is important to learn the specific advantages and disadvantages of individual processes.

(a) Offset lithography is to be used for the colour printing of the DVD paper insert.

(i) Explain **one** advantage of using offset lithography for printing.

(2)

Offset lithography prints to a high quality,
so the design will be in ~~high~~ full colour, so
will be aesthetically pleasing, and more customers
will be attracted to buy it.



ResultsPlus Examiner Comments

This response attracted full marks as it identifies the high quality output from lithographic printing process and goes on to explain how this improves the appearance of the product which attracts customers.

Question 14 (a) (ii)

In many cases the quality control measure suggested was focused upon finishing processes, such as trimming, rather than upon print quality. Dimensional checks therefore were not accepted. Judging by the responses this may be a subject area which is not covered by many centres. Although quality control is referenced within the subject specification it is not itemised within the bulleted content list. Any reference to colour quality, the most common response, was accepted

(ii) Name **one** quality control measure that is used in printing DVD paper inserts.

(1)

Registration marks



ResultsPlus Examiner Comments

This response makes a rare and appropriate reference to the use of registration marks.



ResultsPlus Examiner Tip

Use the subject specification to tick off all the areas you have covered so that you do not leave any out.

(ii) Name **one** quality control measure that is used in printing DVD paper inserts.

(1)

quality of the colour / colour consistency



ResultsPlus Examiner Comments

This was the most common type of response which attracted the mark for this question.

Question 14 (a) (iii)

This question was a relatively good differentiator. A large number of candidates provided well justified arguments for the use of photocopying for smaller scale/prototyping runs. However, a significant number of responses referenced the suitability of photocopying for mass production, suggesting a lack of understanding of the process. Many also misrepresented photocopying as a low quality, black and white process.

(iii) Describe **one** situation where photocopying is a more suitable method for producing DVD paper inserts.

If the DVD is made in a small batch, ^{te. (e.g. 1000 copies)⁽²⁾} for a limited edition DVD sale, then photocopying may be more suitable. as photocopying is cost effective for batch production.



ResultsPlus Examiner Comments

This response correctly identifies photocopying as being more cost effective for short production runs. It would have been nice to see the candidate make reference to the lack of setup costs leading to lower unit costs as an explanation. Nevertheless the answer was worthy of 2 marks.



ResultsPlus Examiner Tip

It is important to be able to recommend printing processes in the context of different scales of production.

(iii) Describe **one** situation where photocopying is a more suitable method for producing DVD paper inserts.

A limited edition / special cover for the DVD. Print one copy off and photocopy the amount needed for batch production. ⁽²⁾



ResultsPlus Examiner Comments

Although this response recognises that photocopying is more suitable for smaller production runs it does not go on to expand upon this point effectively and only attracts 1 of the 2 marks available.

Question 14 (b)

This is a question which appeared later in the paper so we would expect it to differentiate between candidates. The majority of candidates responded well to this question with most appearing to understand the difference between aesthetic and functional properties. However some are still reliant on generalised answers (strong, lightweight, cheap) without qualification or justification.

(b) The DVD case is made from polypropylene

Explain **one** aesthetic property and **one** functional property of polypropylene when used for a DVD case.

(4)

Aesthetic property

Polypropylene is transparent and may have a glossy finish, making it aesthetically appealing to customers and allowing them to see the paper insert easily.

Functional property *

The polypropylene is a shock absorber so it will protect the CD from damage if the case falls as it absorbs impact.



ResultsPlus
Examiner Comments

This response attracted full marks because impact absorbance was accepted as equivalent to impact resistance. Both properties were effectively explained.

(b) The DVD case is made from polypropylene

Explain **one** aesthetic property and **one** functional property of polypropylene when used for a DVD case.

(4)

Aesthetic property

It is cheap and fast to produce. It can be ordered as batch and also be recycled.

Functional property

It can be easily moulded therefore can fit DVD covers shape. It is also durable and reasonably cheap.



ResultsPlus

Examiner Comments

This candidate supplied a list of properties and struggled to expand upon them effectively. There is no reference to aesthetic properties so only one correct answer could be accepted and a single mark was awarded as a result.



ResultsPlus

Examiner Tip

Learn your material properties so that you can avoid generalised terms such as strong and cheap.

Question 14 (c)

There were some very good responses given to this question. Many candidates explained the function of the symbol with reference to issues such as landfill capacity or to resource conservation. However some candidates offered 'protect the environment' as a reason which simply repeated information given in the question. A smaller proportion made reference to the function of the symbol as an identifier allowing products to be sorted more easily at recycling centres.

Some candidates felt that the number 5 represented the amount of times the material could be/had been recycled, or the percentage of the material that could be/had been recycled.

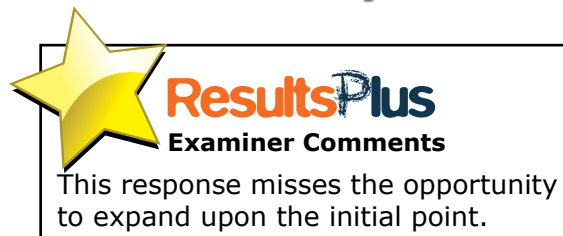
The symbol below is embossed on the DVD case.



(c) Explain how this symbol can help to protect the environment.

(2)

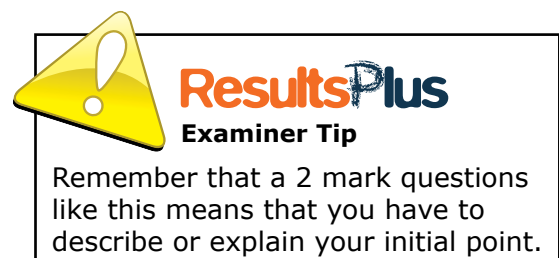
this shows that the product that has the symbol shown can be recycled.



(c) Explain how this symbol can help to protect the environment.

(2)

This informs the user that the product is recyclable. The user now has that knowledge and is more likely to recycle the product which is beneficial for the environment as the case will not be burnt or put in a landfill.



Question 14 (d)

There were many articulate examples and well-justified responses to this question. Most candidates made reference to the danger of being sold pirated or poor quality products or of losing money to fraudulent websites. Others referenced the problems associated with postal delivery such as damaged merchandise or delays in receiving the product. However there were also a significant number of responses which simply offered one or two disadvantages without expansion.

(d) Explain **one** disadvantage to the consumer of purchasing DVDs using the internet.

(2)

Consumers can only see the picture of product on the internet, they are not be able to check if there is cracks or anywhere broken ~~or anywhere~~



ResultsPlus Examiner Comments

This is a rather brief response but it communicates a justified point and attracts 2 marks.



ResultsPlus Examiner Tip

Use the space provided as a guide to the length of your answer.

(d) Explain **one** disadvantage to the consumer of purchasing DVDs using the internet.

(2)

Internet shopping requires a person to insert personal and banking details which can lead to invasion of privacy or hacking, this is better avoided by visiting the store



ResultsPlus Examiner Comments

This is a mature response which demonstrates a good understanding of privacy/security issues related to purchasing goods over the internet.

Question 14 (e)

Responses to this question generally exhibited very good levels of knowledge and understanding. Candidates were very familiar with the issues involved with the provision of wind power. This is a topic which is covered in more than one subject area which may help to account for the quality of the responses. Almost all candidates were able to address a range of relevant issues and responses were differentiated by their detail and by the quality of argument. Weaker responses tended to offer lists of advantages and disadvantages with little or no expansion. Candidates who submitted grids or bullet lists sometimes failed to satisfy the criteria for a level 1 response. This type of question demands a reasoned and expansive argument. A few candidates failed to grasp the concept of wind farms and their responses focused upon individually owned wind turbines. There was little understanding of how wind power is financed and the relationship of energy derived from wind power to the national grid.

Stronger responses were characterised by a good grasp of the arguments and the ability of candidates to expand upon them, exploring related issues in depth. Most candidates addressed issues related to the environmentally friendly nature of renewable energy derived from wind farms and went on to explain how investment in these reduced reliance upon fossil fuels. Stronger responses went on to explain how this helped to conserve non-renewable resources and helped to reduce emissions which in turn helped to slow down the greenhouse effect and consequent climate change. A few candidates went on to explain how this helped the UK government to come closer to meeting its targets established by international agreements such as the Kyoto Protocol.

It was important to address both advantages and disadvantages and almost all candidates went on to do so. Again weaker responses tended to go from one point to the next. If there was an expansion of the argument it was often superficial; candidates might cite the effect on wildlife describing how birds might get caught in the blades. Stronger answers went further, exploring issues related to the amount of space required, the resultant loss of habitat and its effect on bio-diversity in the area in comparison to other sources of power. Many then pointed out that this problem could be avoided by siting wind farms offshore although this was expensive and could be a danger to shipping.

* (e) Large wind farm installations are designed to help meet energy demand in the UK.

Discuss the advantages and disadvantages of these installations.

(6)

The advantages of these installations are that firstly, wind energy once up and running contributes no greenhouse gases into the atmosphere, which means less effect on the rate of global warming. Secondly, the farms provide employment. People are employed to make the turbines and install them, and others mainly local to the area of the wind farm run and maintain them so can decrease unemployment. Lastly, we need to meet levels of minimum pollution and greenhouse gas emissions as we are signed up to the Kyoto protocol and have laws laid

down by the EU, so having these installations will help us meet our goals and set us up for the future, as fossil fuels are finite and we need a greater energy mix.

Disadvantages of these large wind farms are that they cause visual and noise pollution for local people and environmentalists have fears over the impact on local wildlife, so causes conflict.

They are also very expensive to build and maintain, ~~which~~ so they are not a cheap option so the taxpayer may suffer.

Wind is not always reliable. It's not windy 24/7 so they can not make energy all the time to meet top demand.



ResultsPlus Examiner Comments

This is a good example of a level 3 response. This candidate clearly understands the arguments and expresses them articulately. This is a discussion rather than a list and points are expanded effectively. Technical language is used and there are few grammatical errors. Nevertheless, this response would have benefited from more references to other power sources, such as nuclear and solar, as a comparison.

*(e) Large wind farm installations are designed to help meet energy demand in the UK.

Discuss the advantages and disadvantages of these installations.

(6)

The advantages are that lots of power is produced and wind power is renewable therefore it meets the power demand and will not run out. The disadvantages are the ~~cost~~ resources and energy needed to create and maintain the wind farms also it can ruin people's view of their back garden / surrounding area. In conclusion it has many advantages and disadvantages but the advantages are much better than the disadvantages so large wind farms are a good thing for the UK.



ResultsPlus

Examiner Comments

This response explores three areas but there is only limited evidence of expansion. This is characteristic of a level 1 response.



ResultsPlus

Examiner Tip

It is important to explain your points. Use connective words and phrases such as 'so that', 'therefore' and 'as a result'.

Paper Summary

Based on their performance on this paper, candidates should:

- Avoid employing generic or colloquial terminology such as 'strong', 'cheap', 'fast', 'easy', and 'professional'. If these terms are used it may help to qualify them.
- Write their responses neatly and legibly. Annotated diagrams/sketches need to be clear and easily understood.
- Include supplementary sketches to explain their ideas.
- Confine their answers to the spaces provided because the papers are scanned and cropped before they are marked which means that work outside these areas could be lost. Additional sheets can be used but it is important to identify and record which questions have required extra space within the booklet and on the additional sheet.
- Avoid repeating information from the question.
- Use the mark totals and answer spaces as a guide to the length of their answers.
- Use the subject specification as a checklist to ensure that they have covered the whole specification.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

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