



Examiners' Report June 2011

GCSE Design & Technology 5GR02 01

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Introduction

The Chief Examiner and examining team were pleased to see a good standard of responses from candidates in this second year of the new examination. It was apparent that centres had prepared candidates sufficiently with the new template format of the exam.

It was impressive that the vast majority of candidates had at least attempted all the questions on the paper. Very few responses were simply left blank which suggests that centres are encouraging candidates to at least give 'educated guesses' and not simply give up when they encounter a difficult question.

Unclear hand-writing and use of grammar continues to be a problem for the examining team when attempting to award marks. Benefit of the doubt will be given to candidates where appropriate. However, centres are strongly advised to ensure that candidates are encouraged to write clearly, and ensure spelling and grammar is correct.

Centres should continue to encourage candidates to answer in concise sentences or even bullet points and to avoid long and repetitive responses, especially to extended-writing type questions such as 'evaluate', 'compare' or 'discuss'.

'Explain' style questions continue to cause problems for some candidates. Centres should continue to thoroughly prepare candidates for exams, especially the use of the following command words:

Give, State, Name (1 mark) -

These type of questions will usually appear at the beginning of the paper or question part and are designed to ease candidates into the question with a single statement or short phrase for one mark.

Describe, Outline (2+ marks) -

These type of questions are straightforward. They ask candidates to describe something in detail. Some questions may also ask candidates to use notes and sketches, therefore, gain marks with the use of a clearly labelled sketch.

Explain, Justify (2+ marks) -

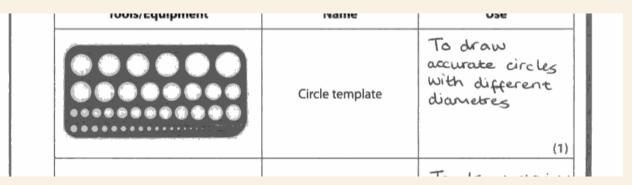
These type of questions will ask candidates to respond in detail – single statements will not achieve full marks. Instead, candidates will have to make a valid point and then go on to justify it to gain full marks.

Evaluate, Discuss, Compare (4+ marks) -

These type of questions are designed to 'stretch and challenge' candidates. They will be awarded the most marks because they require candidates to make a well balanced argument, usually involving both advantages and disadvantages.

Question 11 (a) (i)

The vast majority of candidates were able to correctly describe one relevant use for a circle template. Many clarified the use even further by stating that it was for 'drawing accurate circles'.

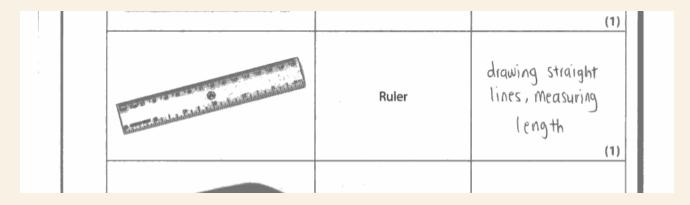




A typical candidate response to this first shortanswer style question for one mark.

Question 11 (a) (ii)

Again, the vast majority of candidates successfully identified 'for measuring' or 'drawing straight lines' in their responses with many even stating both.

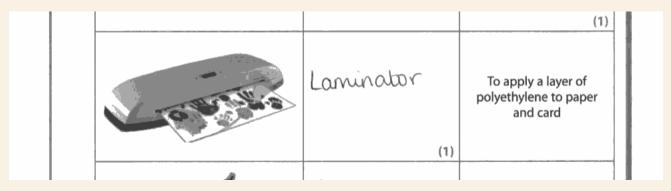




No problems for candidates here. 'Drawing straight lines, measuring length' is a good response as it provides two relevant uses for the one mark.

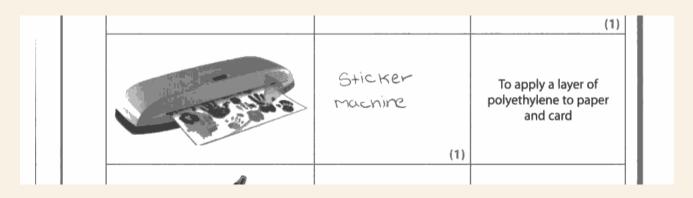
Question 11 (a) (iii)

The majority of candidates were able to identify the piece of equipment as a laminator using various spellings. Common incorrect responses were 'printer' which presumably referred more to the diagram rather than the description.





This candidate has correctly identified the relevant piece of equipment commonly used in Graphic Products.

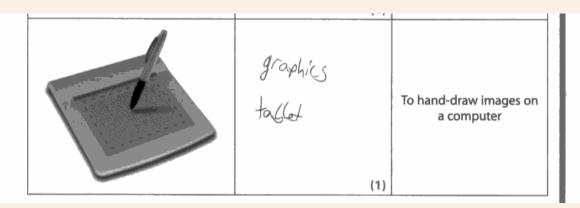




However, this candidate has not correctly identified the laminator. Candidates should read the use as well as look at the diagram.

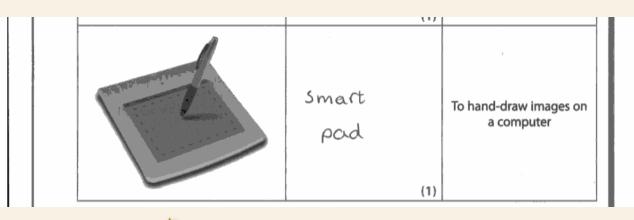
Question 11 (a) (iv)

The question table ramps in difficulty and candidates were split into three distinct groups for their responses. One group correctly identified the piece of equipment as a 'graphics tablet' or any other correct name and many simply did not know. However, a significant group of candidates seemed to know what it was but could not state one of the correct names.





There are a number of acceptable names for this piece of equipment and the mark scheme accommodated the most appropriate including 'graphics tablet'. This piece of equipment is commonly used in CAD/CAM.





'Controller for a smart board' or 'smart pad' were common incorrect responses.

Question 11 (b) (i)

This question provided candidates with the opportunity to access full marks quite successfully. The vast majority realised the reason was to protect the product although some candidates still struggled with the correct terminology for expressing 'absorbing impact' as a property, instead stating 'soft' or 'filled with air bubbles' etc. It was great to see that 'cheap' was seldom named as a property which suggests that centres are taking on board feedback from past exam series. Many candidates gained a mark for the reason even though the property was incorrect.

(i)	Give one property of expanded polystyrene that makes it suitable for packaging electrical products.
	For your property, give one reason for your answer. (2)
	Property
464611111111111111111111111111	High Impact resistance
	Reason
\$\$\$\$P\$	Electrical products inside the packaging will be
(H)	Kept Safely (Consultated heard that makes it suitable for packaging



'Ĥigh impact resistance' is a great property to state in terms of this type of packaging. This candidate goes on to successfully give one reason appropriate to the product.



This type of question is very similar to an EXPLAIN question. Candidates are required to state a property and then back it up with a reason. This question could have been worded 'Explain one property of expanded polystyrene that makes it suitable for packaging electrical products'.

Question 11 (b) (ii)

Many candidates correctly identified the 'impact resistance' property in this material too. However, 'strong' and 'cheap' featured much more which were both unacceptable properties. Again, some candidates struggled to state the correct property but could usually provide a reason for their answer, therefore gaining a mark. Some candidates mixed up the property and the reason but 'benefit of the doubt' was given if appropriate.

(ii) Give one property of corrugated board that makes it suitable for packaging electrical products.

For your property, give one reason for your answer.

(2)

Property

Property

Reason

Keeps the product safe and gives it more

protection



'Resistant to knocks' is just another way of saying 'impact resistance' which is a valid response. Both materials are chosen for their impact resistant properties so there was some overlap here.

Question 11 (c) (i)

The most frequent responses for the use of Flexography were: 'cheap', 'quick' and 'good quality'. However, 'cheap' is never an acceptable response as it is unspecific. 'Relatively inexpensive compared to other printing processes' is a much more appropriate response in this instance. However, many candidates were able to gain at least two out of the three marks available.

(i)	The flexography process is to be used to print graphics onto the corrugated board.
	Give three reasons for the use of flexography for printing the graphics. (3)
1 can	be cost eggecture when lots of prints are done
2	produce detailed mages
3	a quick process
(ii)	Explain one reason why gravure is not used for printing the graphics onto the



'Cost effective' is always a much better response than 'cheaper'. This candidate has stated three appropriate reasons for using the printing process.

Question 11 (c) (ii)

The majority of candidates correctly identified Gravure as an 'expensive' printing process or that it was a 'high quality' process. However, many failed to fully explain their reason for two marks or simply stated two unrelated reasons. Unfortunately, some candidates stated 'easy to do' which, along with 'cheap' is never an appropriate response.



There are a number of acceptable names for this piece of equipment and the mark scheme accommodated the most appropriate including 'graphics tablet'. This piece of equipment is commonly used in CAD/CAM.



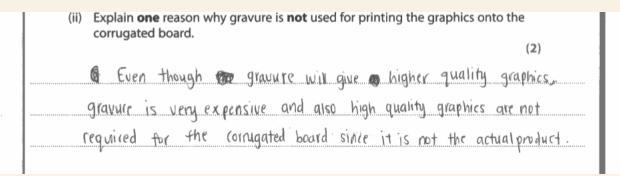
Although the vast majority of EXPLAIN questions will be worth 2 marks, some may be worth 3 marks. Therefore, a statement with two justifications is required.

Question 11 (d)

Paperboard: Most candidates managed to gain at least one mark for paperboard providing a 'good print surface for graphics' but were unable to fully justify the reason. 'Rigid' featured several times again on this question which was not a valid reason.

Aluminium Foil: 'Waterproofing' property was the main incorrect responses which featured strongly here. Other popular incorrect responses referred to 'contamination' and 'freshness' and that aluminium 'didn't rust'. However, many candidates were able to give a text book response which suggests that this part of the specification was well revised.

Polyethylene: Most candidates gained at least one mark by identifying that 'the liquid would not spill/leak'. However, they frequently failed to say that this was because it was 'waterproof'. A significant group of candidates mistakenly thought that the polyethylene referred to a drinks cap and not the actual packaging laminate. Again, a variety of two unrelated properties or reasons were given which could not achieve full marks.





This candidate's response achieves full marks. The purpose of the 'aluminium foil' in the packaging laminate caused the most problems for candidates.

Question 12

A wide range of appropriate designs were evidenced, from injection moulded carry cases to PVC tubes, but the most popular being a corrugated cardboard box style and a blister pack. Designs were generally communicated very well with some excellent sketching ability demonstrated. The use of detailed annotation was welcomed by examiners where sketches did not convey design intentions as well as they could.

Some candidates provided design ideas that were either identical or the second design was just a slight variation on the first. Centres are reminded that the second idea needs to be conceptually different to the first idea. This meant that candidates often failed to pick up as many marks as perhaps they could or should have. A small number of candidates provided just one idea, or two rather incomplete ideas.

In cases where candidates did not read the question thoroughly, a significant group failed to present design ideas that contained both of the action figures. Therefore, the first four specification points were extremely hard to achieve. Some candidates designed packaging for entirely different action figures altogether or designed the action figures themselves.

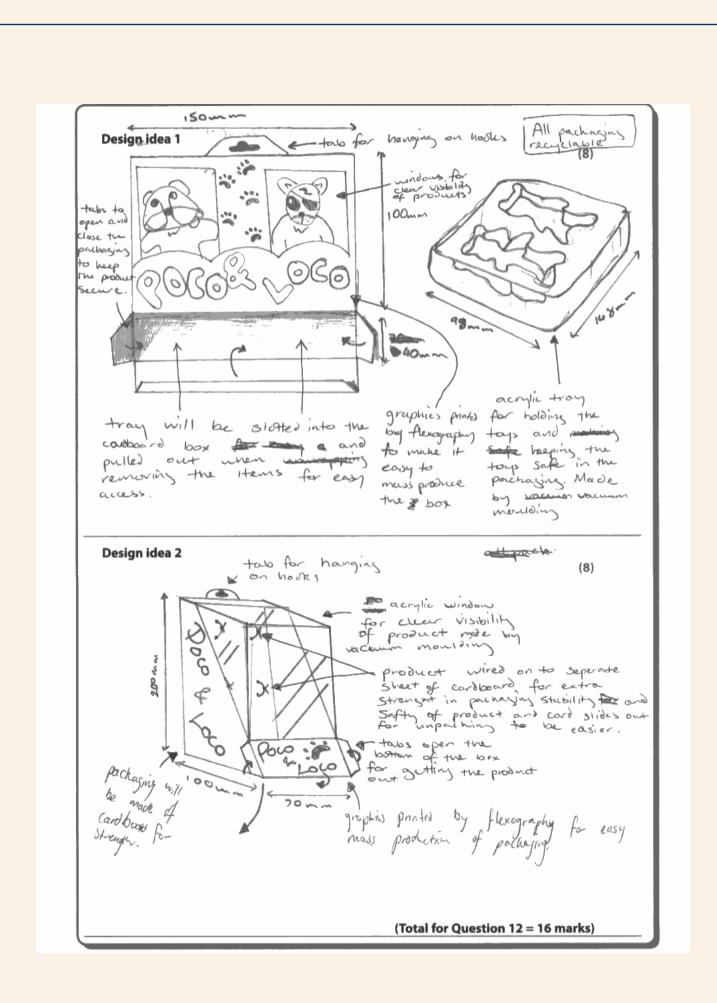
Valuable marks were dropped where a specification point(s) were left out completely. The method of holding the figures securely was not often clearly identified or communicated. Commonly, an appropriate specific material was not named (generic 'plastic' being unacceptable) or a mass production process relevant to the materials statement. Manufacturing processes can be for the actual 3D element such as 'vacuum formed blister' or a relevant printing process such as 'offset lithography for the backing card'. Highly successful candidates drew up a specification checklist or numbered their annotation accordingly.



The specification clearly indicated that the packaging must be for the two figures illustrated - Poco and Loco. Unfortunately, this candidate could only gain a couple of marks out of the full 16 marks.

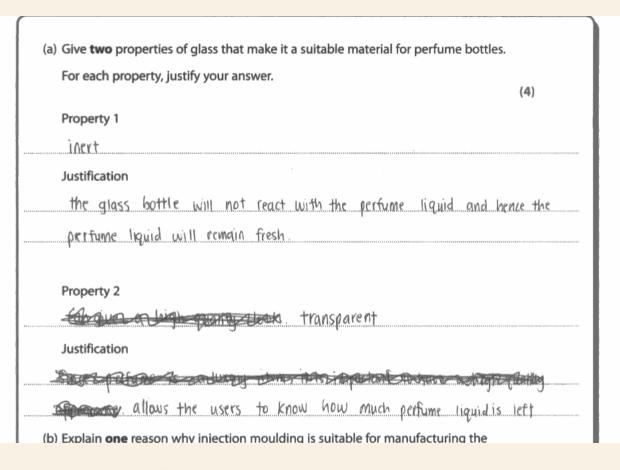


Please note that this design question is worth 20% of the whole paper so candidates must ensure that they read the question and specification points thoroughly.



Question 13 (a)

A generally well answered question with the majority of candidates being able to at least identify one property of glass with good justification. 'Benefit of the doubt' was awarded on a number of occasions where the property was incorrect or not specific enough but the reason was appropriate.





This candidate has successfully stated two relevant properties of glass and given appropriate reasons for its application in perfume bottles.



This candidate has clearly 'scribbled out' their first response so that their final response is easily distinguished.

Question 13 (b)

Many candidates were able to gain at least one mark for mass production being 'accurate' or other correct statements. However, they were unable to expand upon this response to gain the additional marking point. 'Explain' type questions continue to cause problems for candidates where an unjustified statement is made which can only achieve one mark.

(b) Explain one reason why injection moulding is suitable for manufacturing the polystyrene (PS) lid.

(2)

It can be made in was production, and thus will make sure the ud fits the bottle, as they are all the same.



This candidate has used 'cheaply' which did not gain a mark. However, there is sufficient detail in the response as a whole to gain full marks.

(b) Explain one reason why injection moulding is suitable for manufacturing the polystyrene (PS) lid.

(2)

Injection Moulding (S. a. quick and easy process to Mould Polystyrene into a particular shape. This means in mass production the lids will be process made quick and easily.



There is considerable repetition occurring here with 'quick and easy' being used as the main reason for injection moulding. This response is worth one mark.

Question 13 (c) (i)

A generally well answered question with most candidates gaining at least one mark for 'protection, 'water/airtight' or 'prevents leaking'. The additional mark was usually gained by simply stating that 'glass was a good material to use (1) because'

(c) Explain why the perfume bottle is successful at meeting the following specification points:

(i) containing the perfume.

Because gluss is the gerfect material as it's strong and rigid and will not let any of the perfume come out unless there is a crack or a break.



This candidate has given a great response worthy of the two marks.



Questions 13ci and 13cii will always ask why the product given is successful at meeting specification criteria.

(c) Explain why the perfume bottle is successful at meeting the following specification points:

(i) containing the perfume.

(2)

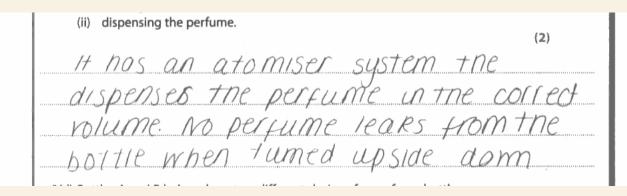
Because it has a circular shape which allows the perfume to be held in there.



Unfortunately, this candidate failed to score any marks for this response.

Question 13 (c) (ii)

An extremely well answered question with the majority of candidates being able to correctly identify the 'atomiser system' as the means of 'dispensing a measured quantity of perfume' or 'being simple to operate'. Some candidates confused dispensing with 'disposing' of which led to incorrect responses based upon glass being able to be recycled.





Question 13 (d)

A generally well answered question with some excellent and really detailed and analytical responses evidenced. Some candidates were, therefore, able to achieve a level 3 with 5-6 marks.

Many candidates confused 'user requirements' with material and component requirements' or 'performance requirements' and discussed the 'strength' of glass or that it could 'smash if dropped'. This question focussed upon the aesthetics of the two perfume bottles and what made them appealing to potential customers.

A number of candidates repeated themselves. With extended-writing type questions such as these, candidates should be encouraged to read through what they have written before they move on to the next question. Making a draft on a spare piece of paper, time permitting, is good practice.

Evaluate bottle A compared with bottle B in terms of following the specification

criteria 'form' and 'user requirements'. (6) your a to have which the user would Bottle A has (Total for Question 13 = 16 marks)

ResultsPlus

Examiner Comments

This is a typical good response which achieved a level 3 in the levels mark scheme (5-6 marks). Examiners are looking for trigger indicators from the indicative mark scheme and then an additional mark for the quality of written communication.

Evaluate bottle A compared with bottle B in terms of following the specification criteria 'form' and 'user requirements'.	Y

(6)

Bottle A making it mare	Bottle B.
More difficult to make a spenie	Enisto narupactue > blannoulding
birected at mer because of	Directed at homen because of
He masculine shape.	He ferminaire stope
hooks chape because of	Horehigh queality work
He brushed metal.	because it is made from
	glass, theretoe heaper
Glassardmetalused	Glass and plasteused
Opaque lideannot see the	Clear i'd so you can easily
disperser	see the disperse
Unlikely to loose the lid	Mayearly book the Lid
,	becauseilischen
More difficult to hold	Eosy to hold because it fits
and therefore dispanse.	Hasterga of a palm.
Hetal means you	Can seather about of the liquid
carret see the tiquid.	(Total for Question 13 = 16 marks)



Question 13d is an extended-writing type question which will always be worth 6 marks. However, this candidate has presented their response in an extremely clear manner by dividing the page in two and using bullet points.

Question 14 (a) (i)

A fairly straightforward question with some straightforward responses evidenced. Most candidates successfully gained the mark for 'copying/transferring ideas'.

(i) The sketches were drawn on tracing paper.

Give one benefit of using tracing paper when developing designs.

YOU CAN ACCURABLY COPY HU ORIGINAL PICTURE

(1)



A typical response to this question which achieved one mark.

Question 14 (a) (ii)

Many candidates were able to gain at least one mark for the 'bright white' or 'good quality finish' on cartridge paper. Common incorrect responses included that 'markers did not bleed into the paper', that it was 'easy to draw on' or most popular 'it looks professional'. A number of textbook responses were evidenced.

(ii) The final presentation drawing was drawn on cartridge paper.

Give two reasons for producing the final drawing on cartridge paper.

(2)

1 It is high quality so will give a high

Quality finish.

2 It is thicker so is more durable.



Two relevant reasons stated here which demonstrates the candidate's knowledge and understanding of the topic paper and board.

Question 14 (b)

Very few technical responses were evidenced, with most candidates gaining marks referring to 'data transfer', 'portability' and 'linking devices'. In many cases, candidates simply spread one answer across all four parts i.e. 1. Sending files, 2. Receiving files, 3. Sending music, etc.

(b) Bluetooth® devices make use of wireless personal-area networks (PAN) or piconets. Describe four features of a Bluetooth® wireless personal-area network. (4) 1 Free to use so it doesn't cost the user From st retreativing data
2 No wires needed 50 can be taken anywhere and doesn't need to carry wires with 1- anywhere it goes 3 Compahable with ather bluetooth devices so
can retreive dota from priands family or from colleagues 4. Simple to connect so people wouldn't be put off Using the feature and would be hassel-free



This candidate gains two marks for their responses 3 and 4. 'Wireless' was given in the stem of the question so was not an acceptable response. 'Free to use' was a popular misconception - obviously, candidates do not pay the monthly charges for their smart phones.

Question 14 (c) (i)

A generally well answered question. A good range of appropriate responses were given here with many candidates successfully justifying their reasons for two marks. 'Uses less electricity (1) therefore saving energy/fossil fuels (1)' enabled most candidates to gain at least two marks and most gained a further mark for either 'recyclable' or 'thinner/ less materials used'. A few candidates did not read the question thoroughly enough and gave non environmental responses such as 'better picture quality'.

(i) Explai	ii two beiner	115 10 1110 01		t of an LCD t	C1C 7151011.		(4))
AΛ	LCD	50,	ren	uses	120	every	y 1	han
a tradi	tional	callo	cle ^a	ing tube	_ (CRT)	SCNE	۹,
This amount	eaus fly		resour			fuels	()	saud
91	LCD S	reen	is u	sually	a	101	thinn	er an
smaller	thon	α	CRT	screen	J.	nich	Udes	0.15
∧ Sources	1	manufac	1.~	which	- [Savec	ener	92:



This candidate has given two great benefits of LCD televisions to the environment - energy saving and using less raw materials.

	(i)	Expla	in two benefits to the	e environment of an LCI	television.	(4)
1.	#	J	heys	Se the	e pla	Netano
HS	eco	FI	endly.			
2	エナ	-	More	Clear	to se	e when
	WI	<i>ia</i>	ching.			



This candidate's first response makes little sense and a common mistake for the second has been made. Some candidates did not read the question properly as the benefits had to relate to the environment and not benefits to the viewer.

Question 14 (c) (ii)

The vast majority of candidates successfully gained one mark for stating 'better picture quality' but significantly less expanded upon this by referring to pixels and resolution. However, a number of candidates demonstrated exceptional technical knowledge and achieved full marks.

(ii) The LCD television is capable of receiving and playing high definition (HD) TV.

Explain one advantage of HD TV compared with standard digital television.

(2)

Resplayed There are more pixely so the image displayed is much clearer and so more comfortable to watch.



A good response which achieved full marks: 'There are more pixels (1 mark) so the image displayed is much clearer (1 mark)'

Question 14 (d)

A number of candidates produced some very good responses to this topic, enabling them to achieve 5-6 marks and a level 3. Very few made no attempt at all to construct a response which was pleasing to see. Where candidates made 'educated guesses', discussions were based around Nicotine patches suggesting that the topic had at least been revised at some point in the course. A common misconception, however, amongst some candidates was that prescription drugs patches would eliminate the need to see the doctor for a prescription (presumably such as Nicotine patches).

A number of candidates repeated themselves. With extended-writing type questions such as these, candidates should be encouraged to read through what they have written before they move on to the next question. Making a draft on a spare piece of paper, time permitting, is good practice.

*(d) Transdermal prescription drug patches are becoming a more popular way of taking medication.
Discuss the benefits of using transdermal patches rather than other methods of giving patients a prescribed medication.
(6)
Using transdemal patches means that the right dosage is always
guien because the amount of drugo in the patch are pre-set and
there is less chance of an overdose
The actobes also decrease the model to take some different disconsisting
The patches also decrease the need to take several doses of mediane
throughout the day. Once the patch is applied it can release the
dosage throughout the day which is easier than several pills.
Some patients are unable to take tablets and theregone applying
a patch is much easier than struggling to consume you medication
it can be hidden under clothes so they can be as comportable as
possible
They are comportable to wear but can be easily prescribed, the
same as medicine or pills Many do not like using needles
or yel they are unhygenic and drug patches promote a comportable
cost effecture alternature
(Total for Question 14 = 19 marks)



A very good response achieving level 3 in the levels mark scheme (5-6 marks). The presentation is great with four distinct paragraphs and clear hand-writing making it easy to determine where marks can be awarded.



The last question on the paper will always be an extended-writing type question worth 6 marks. This is designed to 'stretch and challenge' the more able candidates and is aimed towards the A* candidate. However, this does not mean that it is not accessible to all candidates.

Paper Summary

The great thing about this exam is that it is written into a template structure.

Each exam paper is structured in the following way:

Questions 1-10 - 10 multiple-choice questions.

Question 11a - Completing a table by giving the missing names and uses of four different tools and pieces of equipment.

Questions 11b onwards - Knowledge and understanding of graphic products using structured short-answer questions based on a theme.

Question 12 - Designing products. Use annotated sketches to design 2 different ideas for a given design specification.

Question 13 - Analysing products. Structured short-answer questions and one extended-writing question based upon a specific product (always worth 6 marks).

Question 14 - Knowledge and understanding of graphic products using structured short-answer questions and one extended- writing question (always worth 6 marks).

Candidates can practice exam skills and familiarise themselves with the exam paper structure by completing the two sample papers and the 2010 paper. Therefore, when candidates open up the paper on the examination day there will be no surprises. For example, candidates will automatically know that Question 12 is the design question and that this will be written in a way that they have already practiced several times over.

Grade B	Boundari	es				
Grade bound			r papers, can	be found on t	he website on	ı this
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