

Mark Scheme (Results)

Summer 2012

GCE Design and Technology  
Graphic Design (6GR02)

Paper 01: Design and Technology in  
Practice (Graphic Products)

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Question Number	Answer	Mark
<b>1(a)</b>	<p>Any <b>one</b> of the following:</p> <ul style="list-style-type: none"> <li>• Good strength/protection for contents. (1)</li> <li>• Top layer good surface for printing. (1)</li> <li>• Excellent material for scoring/creasing/folding without splitting. (1)</li> <li>• Relatively inexpensive when purchased in bulk. (1)</li> </ul> <p><i>(Do not accept cheap or strong unless clarified)</i></p> <p style="text-align: right;">(1 x 1)</p>	(1)



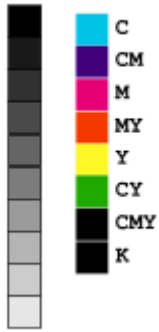
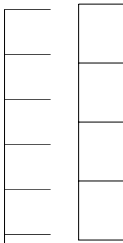
Question Number	Answer	Mark
<b>1(b)</b>	<p><b>One</b> justified answer:</p> <ul style="list-style-type: none"> <li>• Acts as a barrier to light/odour/heat/gas/impurities (1) so preserves contents/ensures hygiene. (1)</li> <li>• Adds to the strength of the card (1), so gives additional protection to the contents against contamination. (1)</li> <li>• Keeps the product cool once chilled/provides insulating layer (1) adding to enjoyment of beverage. (1)</li> <li>• Prevents UV/sunlight contamination (1) so stops contents becoming spoiled/keeps fresh/longer shelf life. (1)</li> <li>• Stops leaks/waterproof (1) so allows boxboard to last longer. (1)</li> </ul> <p><i>(purpose of aluminium in packaging)</i></p> <p style="text-align: right;">(2)</p>	(2)

Question Number	Answer	Mark
<b>1(c)</b>	<p>Aesthetic: any <b>one</b> from the following</p> <ul style="list-style-type: none"> <li>• Available in variety of colours/finishes. (1)</li> <li>• Gives shiny/glossy finish. (1)</li> <li>• Enhances product impression of quality/more attractive/ enhances printing. (1)</li> </ul> <p>Functional: any <b>one</b> from the following</p> <ul style="list-style-type: none"> <li>• Impermeable to liquids/chemicals/waterproof/protects carton getting soggy. (1)</li> <li>• Allows package to be wiped clean/improve hygiene.</li> </ul>	

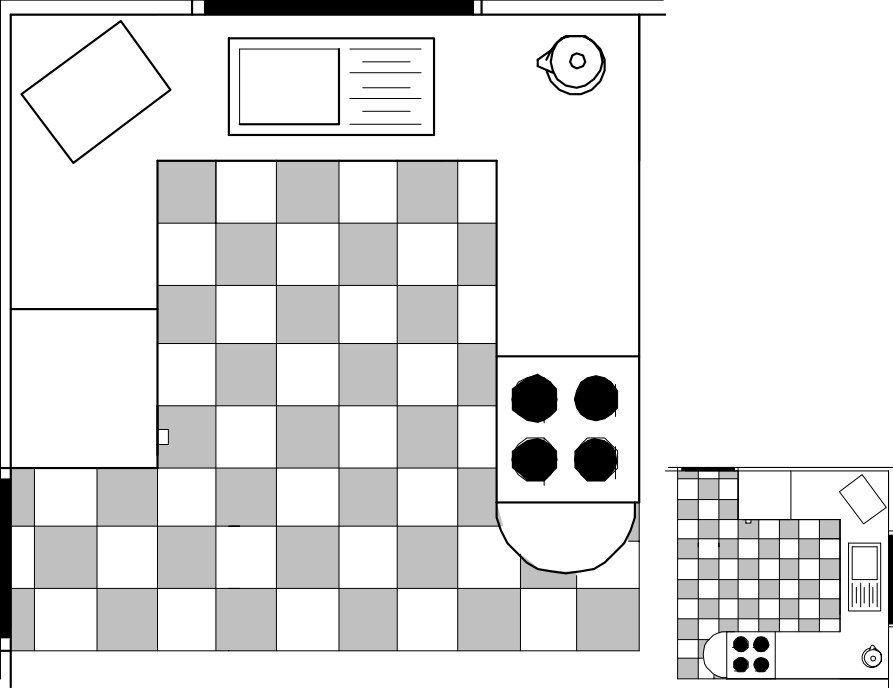
	<p>(1)</p> <ul style="list-style-type: none"> <li>• Easily die cut. (1)</li> <li>• Strengthens package. (1)</li> <li>• Protects the graphics. (1)</li> </ul> <p><i>(The responses must be written under the appropriate heading, i.e. aesthetic or functional.)</i>  <i>(Must have one from aesthetic and one from functional for max marks)</i>  <i>("Protection" must be qualified.)</i></p> <p style="text-align: right;">(1+1)</p>	(2)
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Question Number	Answer	Mark
<b>1(d)</b>	<p><b>one</b> justified answer:</p> <ul style="list-style-type: none"> <li>• Able to see 3D view (1) so saves money on costly real models. (1)</li> <li>• Easy to manipulate/alter/edit (1) to allow alterations/redrawing/rendering. (1)</li> <li>• Library of components/nets (1) makes it easier to construct/draw package. (1)</li> <li>• Drawings can embed cut lines/score lines/folds (1) leading to accuracy in manufacturing/speed in manufacturing. (1)</li> <li>• It allows for collaborative working (1) with different designers producing parts remotely. (1)</li> <li>• Range of fonts/grids/tools/zoom/measurements (1) that all leads to increased accuracy. (1)</li> <li>• Integrated process (1) which can be linked to testing and QC software. (1)</li> <li>• Digital image can be saved (1) so can be used/altered/adjusted later. (1)</li> <li>• Can email to manufacturer (1) allowing direct link to CAM machining/output to printer. (1)</li> </ul> <p><i>(No marks for "fast/quick/accurate" this needs to be justified)</i></p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
<p><b>1(e)</b></p>	<p>Any <b>three</b> from:</p> <ul style="list-style-type: none"> <li>• Performance requirements laid out for materials. (1)</li> <li>• Information is made readily available for product sizes/packaging sizes. (1)</li> <li>• Legal/statutory requirements for label information to be used/non offensive language. (1)</li> <li>• Performance/hygiene requirements laid out for the packaging /inks during use/ recycling/after use/non-toxic. (1)</li> <li>• Ensures the product is fit for purpose/safe for use. (1)</li> </ul> <p><i>(features of BSI regulations on package design NOT explanation of BSI)</i></p> <p><i>(If three valid points are given in the same answer space award three marks.)</i></p> <p style="text-align: right;">(3x1)</p>	<p style="text-align: center;">(3)</p>

Question Number	Answer			Mark
1 (f)	<b>Problem</b>	<b>State one effect of the problem</b>	<b>Draw the quality control printers mark associated with the problem</b>	
	Bad register	<ul style="list-style-type: none"> <li>Image will look out of focus/blurred/not aligned. (1)</li> <li>Colours/printing will not be correctly lined up. (1)</li> <li>Colours/printing will overlap and protrude. (1)</li> </ul>	 (1) <i>accept</i>  (1) (1x1)	
	Colour variation	<ul style="list-style-type: none"> <li>Colour quality varies throughout the print run/density incorrect. (1)</li> <li>Colours do not match the proof/inconsistent colour. (1)</li> </ul>	 (1) <i>Accept</i>  (1) (1x1)	

	<p><i>(One mark in each section for max marks)</i></p> <p><math>(1+1)+(1+1)</math></p>	<p>(4)</p>
	<p><b>Total for question</b></p>	<p><b>14 marks</b></p>

Question Number	Answer	Mark
2(a)	<p><i>Accept free hand sketch.</i></p> <ul style="list-style-type: none"> <li>• Plan view. (1)</li> <li>• Walls in place (<i>double lines</i>). (1)</li> <li>• Correct position of door and window (<i>both needed</i>). (1)</li> <li>• Correct layout of worktops and appliances (<i>all needed</i>). (1)</li> <li>• Floor tiles (<i>unshaded acceptable</i>). (1)</li> </ul> <div style="text-align: center;">  </div> <p><i>Acceptable door variations variations</i></p> <p><i>Acceptable window variations</i></p> <p><i>(Do not accept pictorial drawings)</i>  <i>(If multiple views shown mark plan as above)</i>  <i>(Plan view must be orientated as shown. If not 0 marks)</i></p>	
	(5x1)	(5)

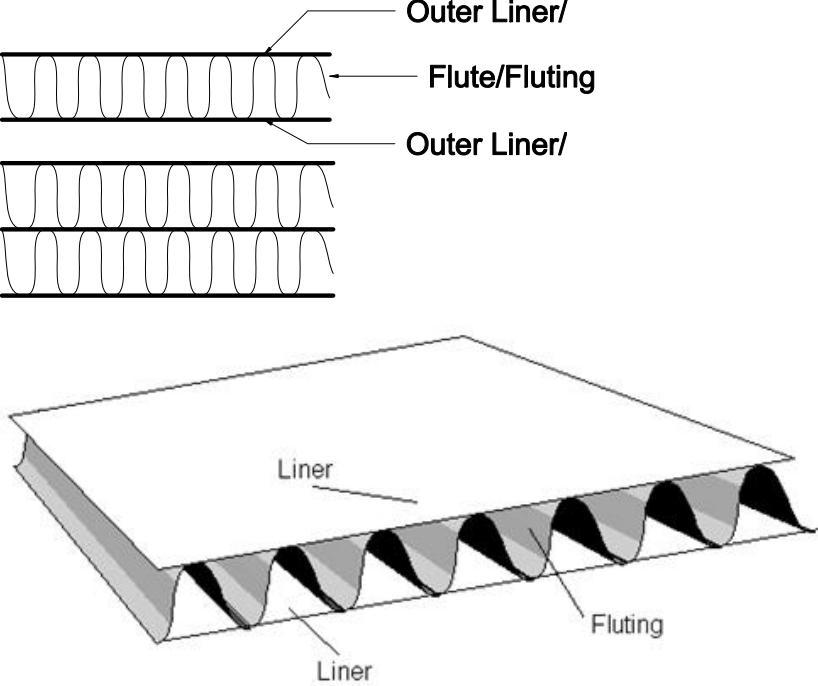


Question Number	Answer	Mark
<b>2(b)</b>	<p><b>One</b> justified answer:</p> <ul style="list-style-type: none"> <li>• Semi-transparent/Translucent (1) so allows overlay and images to be traced/copy through pages. (1)</li> <li>• Smooth surface finish (1) so accepts most drawing media. (1)</li> </ul> <p><i>(do not accept reference to price)</i></p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
<b>2(c)</b>	<p><b>One</b> justified answer:</p> <ul style="list-style-type: none"> <li>• Natural wood (1) so gives realistic impression. (1)</li> <li>• Easy to cut/join/work (1) with good natural finish/range of finishes can be applied. (1)</li> <li>• Readily available (1) and relatively low price in comparison to hardwood.(1)</li> </ul> <p><i>(reasons for using Pine NOT what is Pine)</i>  <i>(reference to price must be justified)</i></p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
<b>2(d)</b>	<p>Any <b>two</b> from the following:</p> <ul style="list-style-type: none"> <li>• Equipment must be maintained/ stored properly. (1)</li> <li>• Employees must be trained to use the equipment correctly/use emergency evacuation procedures correctly. (1)</li> <li>• Employer to provide PPE. (1)</li> <li>• Display signage/warning symbols. (1)</li> <li>• Carry out risk assessments. (1)</li> <li>• Provide ventilation/extraction/guards. (1)</li> </ul> <p><i>(procedures of safety by employers)</i>  <i>(If two valid points are given in the same answer space award two marks.)</i></p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
<b>2(e)</b>	<p>Any <b>three</b> from the following:</p> <ul style="list-style-type: none"> <li>• QA monitors all stages from design through manufacture to after sales. (1)</li> <li>• QA ensures customer satisfaction. (1)</li> <li>• QA ensures the product is fit for purpose/safe through testing. (1)</li> <li>• Ensures the product is the highest standards/quality. (1)</li> <li>• Uses QC to monitor/check/test product at specific points. (1)</li> </ul> <p><i>(One mark for describing quality control only.)</i>  <i>(Do not accept "meets specification".)</i></p> <p style="text-align: right;">(3x1)</p>	(3)
	<b>Total for question</b>	<b>14 marks</b>

Question Number	Answer	Mark
<p><b>3(a) (i)</b></p>	<p><i>Drawing:</i></p>  <ul style="list-style-type: none"> <li>• Drawing (1)</li> <li>• Annotation (1): <ul style="list-style-type: none"> <li>◦ Flute/fluting /Liner accept kraft liner/test liner/sole liner. (1)</li> </ul> </li> </ul> <p><i>(Drawing only max 1 mark)</i>  <i>(Any drawing that does not show cross section/fluting 0 marks)</i></p> <p style="text-align: right;">(1+1)</p>	(2)

Question Number	Answer	Mark
<p><b>3(a) (ii)</b></p>	<p><b>one</b> justified answer:</p> <ul style="list-style-type: none"> <li>• Good strength/absorbs impact (1) so gives protection to the product. (1)</li> <li>• Rigid material (1) so allows stacking of boxes. (1)</li> <li>• Relatively inexpensive (1) so doesn't excessively add to the cost of the product. (1)</li> <li>• Recyclable/ biodegradable (1) so reduces environmental impact. (1)</li> <li>• Made from Natural materials (1) so is morally acceptable to use. (1)</li> <li>• Lightweight material (1) that doesn't add undue weight to the package. (1)</li> </ul>	

	<p><i>(explanation why corrugated card is used NOT what is corrugated card)</i>  <i>(Do not accept cheap unless clarified )</i></p> <p style="text-align: right;">(1x2)</p>	(2)
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Question Number	Answer	Mark
<b>3(b)</b>	<p>A= glue flap (1) <i>accept glue tab</i></p> <p>B= upper tuck (1) <i>accept tuck</i></p> <p>C= Dust flap (1) <i>accept dust panel</i></p> <p><i>(do not accept just 'flap' or 'tab')</i></p> <p style="text-align: right;">(3x1)</p>	(3)


Question Number	Answer	Mark
<b>3(c)</b>	<p>Any <b>two</b> justified points:</p> <ul style="list-style-type: none"> <li>• Can be used to print on uneven surfaces (1) as Printing plates are flexible with raised ink pattern. (1)</li> <li>• Use of fast drying water based inks (1) so corrugated card doesn't absorb excess moisture so card doesn't warp. (1)</li> <li>• Low viscosity inks used (1) so flow into rippled surface (1)</li> <li>• Horizontal printing (1) method so corrugated board does not get bent. (1)</li> <li>• Least expensive and simplest printing (1) so doesn't add to cost of product. (1)</li> <li>• Low pressure from rollers (1) so printing doesn't bend/ crush card. (1)</li> </ul> <p><i>(reasons for using flexography NOT what is flexography)</i></p> <p style="text-align: right;">(2x1)+(2x1)</p>	(4)

Question Number	Answer	Mark
<b>3(d)</b>	<p>Any <b>three</b> of the following:</p> <ul style="list-style-type: none"> <li>• Replaces products derived from non-renewable sources. (1)</li> <li>• Moral/ethical impact/ environmental impact/sustainable product. (1)</li> <li>• Reduces landfill as paper is reused rather than put into landfill. (1)</li> <li>• Increases use of bleach/chemicals adding to pollution. (1)</li> <li>• Can have "false impact" / still high use of energy/ pollution.(1)</li> <li>• Pulp packaging recyclable/biodegradable after use. (1)</li> <li>• Less trees cut down/deforestation. (1)</li> </ul> <p style="text-align: right;">(3x1)</p>	(3)
	Total for question	14 marks

Question Number	Answer	Mark
4(a)	<p>Any <b>three</b> of the following:</p> <ul style="list-style-type: none"> <li>• Automated process meaning it can be replicated (1)</li> <li>• No physical contact produces clean edge / no sharp swarf/neater finish. (1)</li> <li>• Less mistakes/removes human error. (1)</li> <li>• Low heat so less distortion /tool/laser wear/ less chance of acrylic breaking. (1)</li> <li>• more accurate/better quality due to computer precision (1)</li> <li>• Very complex cuts / acute shapes that are difficult to replicate by hand. (1)</li> <li>• Faster process than by hand. (1)</li> <li>• Reduces labour costs. (1)</li> </ul> <p><i>(features of laser cutting signage NOT general CAM)</i></p> <p style="text-align: right;">(3x1)</p>	(3)

Question Number	Answer	Mark
4(b)	<p>Any <b>three</b> of the following:</p> <ul style="list-style-type: none"> <li>• Able to withstand extreme weather conditions/waterproof/ weatherproof. (1)</li> <li>• Available in variety of colours/visual appeal/aesthetically pleasing. (1)</li> <li>• Tough/ durable/hard wearing. (1)</li> <li>• Available in variety of surface finishes/opacity/self finishing/ good surface finish / shiny surface finish. (1)</li> <li>• Ease of laser cutting/ machining /joining/shaping/forming. (1)</li> <li>• Able to be backlit. (1)</li> <li>• Easy to clean/wipe clean. (1)</li> <li>• Recyclable (1)</li> </ul> <p><i>(Do not accept strong/cheap/lightweight)</i></p> <p><i>(features of acrylic for use in exterior signage only)</i></p> <p style="text-align: right;">(3x1)</p>	(3)

Question Number	Answer	Mark
4(c)	<ul style="list-style-type: none"> <li>•  Toxic (1) <i>accept poison.</i></li> </ul>	

	<ul style="list-style-type: none"> <li> Harmful (1) <i>accept irritant.</i></li> </ul> <p style="text-align: right;">(1+1)</p>	(2)
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Question Number	Answer	Mark
<b>4(d)</b>	<p>Any <b>two</b> of the following</p> <ul style="list-style-type: none"> <li>Lid fitted securely/sealed container/solvent correctly labelled. (1)</li> <li>Store in cool/dry/well ventilated area. (1)</li> <li>Store away from heat/sun/flame. (1)</li> <li>Store in metal cupboard/locked cupboard/yellow cupboard. (1)</li> <li>Cupboard must have safety signage. (1)</li> <li>Staff to be briefed as to how to store adhesives. (1)</li> <li>Regular checks need to be made by technician/monitoring log. (1)</li> </ul> <p><i>(This question is concerned with control measures during STORING acrylic solvent adhesive)</i>  <i>(If two valid points are given in the same answer space award two marks.)</i></p> <p style="text-align: right;">(2x1)</p>	(2)

Question Number	Answer	Mark
<b>4(e)</b>	<p>Any <b>four</b> of the following:</p> <ul style="list-style-type: none"> <li>Image designed on CAD <u>and</u> sent to vinyl cutter to cut out <i>(both points needed for one mark)</i>. (1)</li> <li>peel off /remove/ weeding background leaving required image.(1)</li> <li>Low tack film/ application tape/transfer tape/masking tape applied over lettering. (1)</li> <li>Mark out surface. (1)</li> <li>Remove image from backing paper with low tack/application tape.(1)</li> <li>Apply image to surface <u>and</u> 'firm' down removing air <i>(both points needed for one mark)</i>. (1)</li> <li>Remove low tack. (1)</li> </ul> <p><i>(accept reference to a program ie 2D design)</i>  <i>(do not accept reference to cutting with laser cutter)</i></p> <p style="text-align: right;">(4x1)</p>	(4)
Total for question		14 marks

Question Number	Answer	Mark
<b>5(c)</b>	<p>Any <b>five</b> of the following:</p> <ul style="list-style-type: none"> <li>• Helps visualise the product/gives accurate/scale/realistic impression. (1)</li> <li>• Product can be seen from 360<sup>0</sup>/all angles. (1)</li> <li>• Clear un-technical view so you don't have to understand 2D orthographic/2d views. (1)</li> <li>• Can automatically modify sizes and dimensions. (1)</li> <li>• Surface textures/lighting detail/colour/rendering can be added. (1)</li> <li>• Helps designer where improvements/faults could be. (1)</li> <li>• Enables client feedback. (1)</li> <li>• Ergonomic/aesthetic testing can occur. (1)</li> <li>• Saves physical model being made. (1)</li> <li>• Surface model can be used as a promotional impression. (1)</li> <li>• Can be linked to RPT. (1)</li> <li>• Easier to work with than 2D modelling. (1)</li> <li>• Can simulate 'in use'/walk round capability/virtual feel. (1)</li> <li>• Ability to edit/modify on screen. (1)</li> </ul> <p style="text-align: right;">(5x1)</p>	(5)
	<b>Total for question</b>	<b>14 marks</b>



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