

# Mark Scheme Summer 2009

GCE

GCE D&T (6GR02)

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Publications Code US021905

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6GR02 Mark Scheme

Question Number	Answer	Mark
1(a)	<ul style="list-style-type: none"> <li>• Text and images can be easily manipulated by cut and paste(1)</li> <li>• A range of different typefaces are available (1)</li> <li>• Images can be imported. (1)</li> <li>• Graphic tools are easy to use (1)</li> <li>• Page layout grids and guides can be added on the screen and are invisible when printed (1)</li> <li>• Can zoom in and out to help detailed work (1)</li> <li>• Allows for greater accuracy of layout because of page layout grids (1)</li> <li>• shown on screen help ensure that elements are in line (1)</li> <li>• Allows for quicker layouts/ design work of card / work can be stored. (1)</li> <li>• Allows for experimentation of layout (1)</li> <li>• Easy to rectify mistakes because program allows manipulation (1)</li> <li>• Files can be sent around the world electronically. (1)</li> <li>• Consistency of colour/ fonts (1)</li> <li>• Cost effective because of less time designing/ less waste. (1)</li> </ul> <p style="text-align: right;">(4 x 1)</p>	(4)
1(b)	<ul style="list-style-type: none"> <li>• Seating position (1) so that the spine is not put in a position that will cause back problems. /muscle tension(1)</li> <li>• Glare from the computer screen (1) causing eye strain / headaches. (1)</li> <li>• Repetitive strain injury (RSI) (1) causing strains to the wrist (1)</li> <li>• Take regular breaks (1) to prevent eye strain/ aches/ RSI (1)</li> </ul> <p style="text-align: right;">(2 x 1) &amp; (2 x 1)</p>	(4)

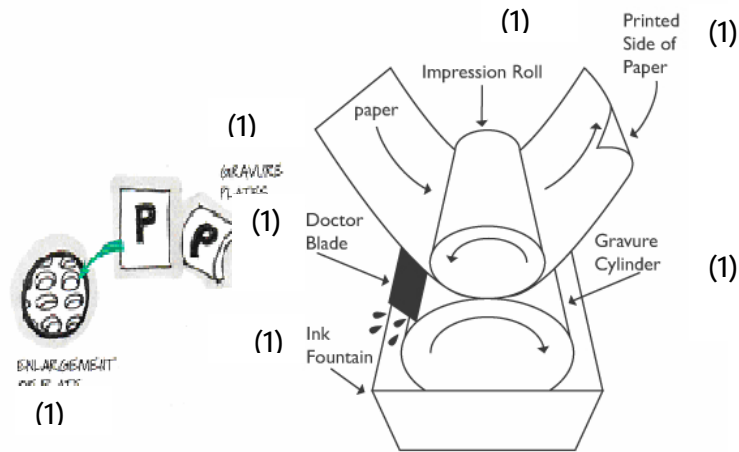
1(c)	<ul style="list-style-type: none"> <li>• Pressure will activate the crystal/ create a voltage (1) which can be used in sound generation. (1)</li> <li>• Sounds generated (<i>this is worth 1 mark only</i>)</li> </ul> <p>Do not accept reference to making card stand out. (2 x 1)</p>	(2)
1(d)	<ul style="list-style-type: none"> <li>• The crystals absorb light /energy (1) which is then released to glow in the dark (1)</li> <li>• Makes card glow in the dark (<i>this is worth 1 mark only</i>) (1) without any power source. (1)</li> </ul> <p>Do not accept makes the card more attractive/ decorative or improves appearance. (2 x 1)</p>	(2)
	Total for question	12

Question Number	Answer	Mark
2(a)(i)	<p><i>A response that identifies any three of the following marking points.</i></p> <ul style="list-style-type: none"> <li>• Optical scanners / sensors linked to computers (1)</li> <li>• They check the colour is correct (1)</li> <li>• If the colour falls out of specification (1)</li> <li>• Computers automatically adjust the colour (1)</li> <li>• Densitometer (1)</li> <li>• Reads colour bar (1)</li> <li>• To check the colour density is consistent (1)</li> </ul> <p style="text-align: right;">(3 x 1)</p>	(3)
2(a)(ii)	<p>Registration marks (1)</p> <ul style="list-style-type: none"> <li>• Used to line up the colours (1) / from the colour bar exactly (1)</li> <li>• Used to line up colours (1) to avoid hickies / blurring / bad register (1)</li> </ul> <p>Grey scale (1)</p> <ul style="list-style-type: none"> <li>• Similar to colour bar but checks shades of grey (1) / from black (at the weakest intensity) to white (at the strongest) (1)</li> <li>• Used to line up image (1) to avoid hickies / bad registration / blurring (1) <i>(do not award if stated in Reg marks)</i></li> </ul> <p>Crop marks (1)</p> <ul style="list-style-type: none"> <li>• To show where the pages should be trimmed (1) / or to show where part of a picture is to be cut or positioned on printed matter / to avoid misalignment when cutting(1)</li> </ul> <p>Visual checks / sample testing (1)</p> <ul style="list-style-type: none"> <li>• Printer expertise (1) / to check overall quality (1)/ visually (1)</li> </ul> <p style="text-align: right;">(3 x 1) &amp; (3 x 1)</p>	(6)

2(b)(i)	<ul style="list-style-type: none"> <li>• It gives consistent colour (1) helped by the ink drying on evaporation. (1)</li> <li>• Allows high speed printing (1) and is good for long print runs (1)</li> <li>• Good results on cheap paper (1) and gives / cost effective high quality print (1)</li> <li>• A range of colours can be used (1) using different plates. (1)</li> <li>• Can print on wide rollers (1) for specialised applications e.g. vinyl flooring (1)</li> </ul> <p><i>NB Gravure expensive to set up.</i></p> <p style="text-align: right;">(2 x 1)&amp;(2 x 1)</p>	(4)
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2(b)(ii)



If no sketch then a max of 3 marks

A response that identifies any four of the following marking points.

- Ferric chloride used for etching. (1)
- Images etched onto a plate / cylinder. (1)
- Image is broken into dots. (1)
- Ink fills the dots. (1)
- Excess ink is removed, (1)
- Using a "doctor" blade. (1)
- Rubber covered cylinders press paper into the cell holes. (1)
- The deeper the holes the darker the image. (1)
- Copper electroplated on to solid steel cylinder. (1)
- Steel cylinder may be chrome plated. (1)
- Different plates for different colours (1)
- Paper goes through a dryer after painting (1)

(4 x 1)

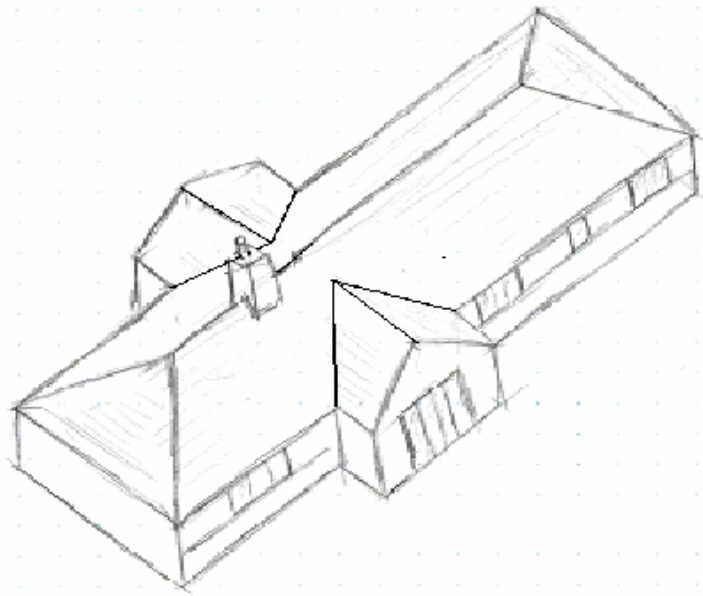
(4)

Total for question

17

Question Number	Answer	Mark
3(a)	<ul style="list-style-type: none"> <li>• Can be easily shaped (using a hot wire cutter). (1)</li> <li>• Can be easily shaped (using hand tools). (1)</li> <li>• Parts can be glued together. (1)</li> <li>• Plaster based fillers can be used to fill cracks / improve surface finish. (1)</li> <li>• Good surface finish can be achieved(1)</li> <li>• Takes a range of paints / Can be readily painted (1)</li> <li>• Porous material (1)</li> <li>• Lightweight so easy to handle. (1)</li> </ul> <p style="text-align: right;">(4 x 1)</p>	(4)
3(b)	<p><i>A response that identifies any five of the following marking points.</i></p> <ul style="list-style-type: none"> <li>• Useful method for visualising the design in 3D. (1)</li> <li>• Different materials / colour schemes can be readily shown. (1)</li> <li>• Different times of the year / day / weather and sun positions can be shown. (1)</li> <li>• Wide variety of viewing angles can be shown. (1)</li> <li>• Clients can walk around / through building (virtually). (1)</li> <li>• Ready access to data from other programs. (1)</li> <li>• Time / cost savings involved as physical models do not have to be made. (1)</li> <li>• Changes can be made quickly without having to start again. (1)</li> <li>• Designs can be sent. (1)</li> <li>• Areas/ dimensions can be shown/ calculated (1)</li> </ul> <p style="text-align: right;">(5 x 1)</p>	(5)

3(c)



- Drawn in direction of arrow (1)
- 3D pictorial drawing of a house. (1)
- 3D pictorial drawing showing 75% of the outline of house. (1)
- Drawn to reasonable proportions /scale. (1)
- Roof drawn with sloping ends as shown in sketch. (1)
- Valleys shown on roof at intersections (must be sloping / angled). (1)
- Correctly drawn windows / doors / chimney (1)

(6 x 1)




(6)

Total for question

15

Question Number	Answer	Mark
4(a)(i)	<ul style="list-style-type: none"> <li>• Polystyrene /HIPS(1)</li> <li>• Polyvinyl Chloride / PVC (1)</li> <li>• Acetate / cellulose triacetate. (1)</li> </ul>	(1)
4(a)(ii)	<p><i>If no sketch then maximum of 4 marks</i></p> <div style="text-align: center;"> </div> <p><i>If no sketch then maximum 4 marks.</i></p> <ul style="list-style-type: none"> <li>• Make former/ mould (1)</li> <li>• Former/ put mould in position. (1)</li> <li>• Polymer / plastic sheet is clamped / secured in position. (1)</li> <li>• Sheet heated (1)</li> <li>• Platform raised (1)</li> <li>• Air sucked out (1)</li> <li>• polymer/ plastic forms over former/ mould (1)</li> <li>• Cold air pumped up to release polymer from former/ mould (1)</li> <li>• Unclamp &amp; release from former/ mould (1)</li> </ul>	<p>(5 x 1)</p> <p>(5)</p>

4(b)

SYMBOL	MEANING
	British standards/ Kitemark/ Shows that the item meets the British Standards Institute safety standards. (1)
	Shows that the item meets the European common market/ union/ directive regulations. (1)
	Shows that the item is not suitable for children less than three (years of age) /36 months. (1)

(3 x 1)

(3)

4(c)	<p><i>A response that identifies any five of the following marking points. A single word / phrase not enough for an outline question.</i></p> <ul style="list-style-type: none"> <li>• Allows total graphic coverage. (1)</li> <li>• Allows outstanding print quality / good surface to print on. (1)</li> <li>• Strong / durable / rigid material for packaging. (1)</li> <li>• Can be recycled / comes from a sustainable source. (1)</li> <li>• Relatively inexpensive / cost effective. (1)</li> <li>• Easy to die cut /cut / fold. (1)</li> <li>• Not easily damaged / protects the product. (1)</li> <li>• Blister pack easily attached to it / takes adhesive readily. (1)</li> <li>• Comes in a variety of thicknesses. (1)</li> <li>• Range of surface finishes can be applied e.g. varnish. (1)</li> <li>• Readily available material. (1)</li> <li>• Can make the product more eye-catching/ marketable (1)</li> <li>• Adds little weight to the product (1)</li> </ul> <p style="text-align: right;">(5 x 1)</p>	(5)
	<b>Total for question</b>	<b>14</b>

Question Number	Answer	Mark
5(a)	<ul style="list-style-type: none"> <li>• Has good insulating properties (1) which means it will keep the liquid hot / heat resistant. (1)</li> <li>• Heat will not pass through the walls (1) to make it uncomfortable to hold. (1)</li> <li>• Suitable for injection moulding (1) which means it can be mass / continuously produced. (1)</li> <li>• It is lightweight (1) so not uncomfortable to hold. (1)</li> <li>• Has low water absorption / waterproof / does not leak(1) so liquid does not seep through the walls. (1)</li> <li>• Retains structure / shape (1) when hot water liquid is poured into it. (1)</li> <li>• Non toxic (1) hence safe to use for this purpose. (1)</li> <li>• Does not react with the drink (1) so does not spoil the taste. (1)</li> <li>• Can be recycled (1) but is expensive to do so (1)</li> </ul> <p style="text-align: right;">(2 x 1) (2 x 1) &amp; (2 x 1)</p>	(6)

5(b)	<p><i>A response that identifies any six of the following marking points.</i></p> <p>What makes it suitable &amp; also unsuitable; there must be points for and against. Max 5 marks if only one side of discussion put forward.</p> <p><b>For</b></p> <ul style="list-style-type: none"> <li>• Takes a variety of finishes / paint / anodising. (1)</li> <li>• It is a flexible material. (1)</li> <li>• It can be printed on. (1)</li> <li>• It can be recycled. (1)</li> <li>• It is a lightweight material that can be easily moved.(1)</li> <li>• It does not rust.(1)</li> <li>• It is durable / good strength to weight ratio / sturdy. (1)</li> <li>• Robust to withstand conditions used in/ Fitness for purpose (1)</li> </ul> <p><b>Against</b></p> <ul style="list-style-type: none"> <li>• It can easily be blown over in a high wind / may lack stability. (1)</li> <li>• Not as sturdy as steel. (1)</li> <li>• More expensive than steel. (1)</li> <li>• Not easily welded. (1)</li> <li>• Easily damaged (1)</li> </ul> <p style="text-align: right;">(6x1)</p>	(6)
	<b>Total for question</b>	<b>12</b>
	<b>Total for paper</b>	<b>70</b>



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