



**General Certificate of Secondary
Education**

*Design and Technology:
Graphic Products*

Specimen Mark Scheme

The specimen assessment materials are provided to give centres a reasonable idea of the general shape and character of the planned question papers and mark schemes in advance of the first operational exams.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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SECTION A

Question 1

- (a) Related to theme, guitar, music, Africa, appropriate colour, effectiveness (3 marks)

Relates images to charity e.g. Image of guitar and Africa, which relates to raising money to combat famine in Africa (3 marks)
 Limited understanding of images and meaning e.g. Image of guitar and Africa (2 marks)
 Descriptive e.g. A guitar (1 mark)
 Not attempted, or incorrect (0 marks)

- (b) Examples would be given of actual candidates' work, to show differentiation of marks

- (i) Use of Specification (2 marks)

Full use of specification (2 marks)
 Partial use of specification (1 mark)
 Untidy, difficult to comprehend, scribble, not attempted (0 marks)

Sketches (6 marks)

Three original ideas (5 - 6 marks)
 Three ideas with some originality (two original ideas, max 4 marks) (3 - 4 marks)
 Three ideas with limited originality (one original idea, max 2 marks) (1 - 2 marks)
 Not attempted (0 marks)

Development (3 marks)

Excellent development showing progression (3 marks)
 Some development showing progression (2 marks)
 Limited development (1 mark)
 No evidence (0 marks)

Annotation (2 marks)

Consistent (2 marks)
 Mostly labels, little reasoning (1 mark)
 Not attempted (0 marks)

- (ii) Final Logo (6 marks)

Excellent quality, has impact and flair (5 - 6 marks)
 Satisfactory quality, conveys design, neat and tidy (3 - 4 marks)
 An attempt, untidy, poor application (1 - 2 marks)
 Not attempted (0 marks)

(Monochrome, maximum 3 marks)

(iii) Tee Shirt

E.g. simplification, stylised, positioning, appeal, colour

Screen Printing (2 marks)

Full understanding of screen printing e.g. block colouring (2 marks)

Some block colouring (1 mark)

Tonal shading or no colour (0 marks)

Transferring logo design (3 marks)

Excellent representation of logo, taking into account appropriate scaling, size, position, proportion etc of logo (3 marks)

Satisfactory representation of logo, some loss of layout etc (2 marks)

An attempt at logo, too crowded, poor communication (1 mark)

Not attempted, irrelevant (0 marks)

(c) Solution e.g. polythene bag, header card, euroslot, tube, hanger, materials named

Materials (1 mark)

Suitable materials identified e.g. card, board, polythene (1 mark)

Inappropriate, not attempted (0 marks)

Constructional details (5 marks)

Could be made by third party e.g. surface development, net, glue flaps, locking flaps, components/fastening used (4-5 marks)

Feasible idea, but some details missing or vague (2-3 marks)

An attempt, Lacking details (1 mark)

Impractical, incorrect or not attempted (0 marks)

Environmental consideration e.g. refuses, reuse, recycle, rethink, reduce, redesign (2 marks)

Reference to environment with explanation (2 marks)

Reference to environment (1 mark)

Incorrect, not attempted (0 marks)

Maximum 8 marks

SECTION B

Question 2

Data Representation: Accept bar chart, pie chart, pictograph etc in either 2D or 3D. Use of ruler/compasses is expected. *Be strict.*

(6 marks)

- | | | |
|-----|---|---------------|
| (a) | Complete, e.g. perfect in all/most details, key/label/colour | (5 - 6 marks) |
| | Good attempt, some slight imperfections e.g. in colour, accuracy, details omitted | (3-4 marks) |
| | An attempt e.g. recognisable some acceptable features | (1 - 2 marks) |
| | Incorrect chart, unrecognisable method, not attempted | (0 marks) |
-
- | | | | | |
|-----|------|---------------------|-----------|----------|
| (b) | Name | Match chart/diagram | (1 mark) | (1 mark) |
| | | Not attempted | (0 marks) | |

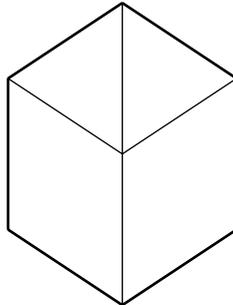
Maximum 7 marks

Question 3

Pictorial sketching and equipment

- | | | |
|-----|--|---------------|
| (a) | (i) Isometric sketch (accept only vertical) | (6 marks) |
| | Good proportion isometric, neat lines | (5 - 6 marks) |
| | Satisfactory, some inaccuracies e.g. untidy line, loss of proportion | (3 - 4 mark) |
| | Adequate attempt, some recognisable features, poor lines. | (1 - 2 marks) |
| | Not isometric, not attempted | (0 marks) |

e.g.



- | | | |
|------|--|-----------|
| (ii) | Thick/thin technique | (2 marks) |
| | Correct technique consistently applied | (2 marks) |
| | Correct technique, but some loss of detail | (1 mark) |
| | Incorrect or not attempted | (0 marks) |
-
- | | | |
|-----|---------------------------------------|-----------|
| (b) | Equipment (<i>be strict</i>) | (4 marks) |
|-----|---------------------------------------|-----------|
-
- | | | |
|---------------|--|----------|
| Item 1 | Name : <u>Safety</u> rule(r) OR Maun, <i>not just ruler</i> | (1 mark) |
|---------------|--|----------|

Use: e.g. to guide bladed tool to assist in cutting paper/thin card. *Not* to measure.

(1 mark)

Safety: e.g. *keep fingers away from blade, in centre recess, use with cutting mat.*
 Full relevant reason given (2 marks)
 Some understanding evident (1 mark)
 Incorrect or not attempted (0 mark)

Item 2 (4 marks)

Name: Craft knife, *not Stanley or knife* (1 mark)
Use: e.g. to cut paper/thin card, windows (1 mark)
Safety: e.g. *keep fingers away from blade, cut away, use mat.*
 Full relevant reason given (2 marks)
 Some understanding evident (1 mark)
 Incorrect or not attempted (0 marks)

Item 3 (4 marks)

Name: Rotary trimmer, *not guillotine, paper cutter* (1 mark)
Use: e.g. to cut/prepare thin card/paper to size (1 mark)
Safety: e.g. *do not try to cut thick card, keep fingers away from blade or from under guard*
 Full relevant reason given (2 marks)
 Some understanding evident (1 mark)
 Incorrect or not attempted (0 marks)

Maximum 20 marks

Question 4

Presentation Drawing and Materials

(a) **Embossing** *Accept any style of arrow* (2 marks)

Very good relief of arrows, e.g. consistent good quality (2 marks)
 Adequate relief, some details consistent (1 mark)
 Relief not attempted or indented (0 marks)

(b) **Presentation** (8 marks)

Very good rendering e.g. high quality, consistent, all materials successfully and correctly represented, high level skills evident, shows flair, shadows consistent and correct. (6 - 8 marks)

Satisfactory colouring e.g. tonal control, good pencil skills within boundaries, even covering, some different materials attempted, some shadowing but inconsistent. (4 - 5 marks)

An attempt at colouring e.g. attempt at control- not always successful, untidy, does little to enhance drawing. (2 - 3 marks)

Hatching, scribble, very untidy does not enhance drawing unworthy of reward. (0 - 1 mark)

(c) **Materials**

Clear polystyrene sheet	'Blister' packaging	<i>e.g. transparent, thermoplastic, vac-formed, tough, readily available.</i> Do NOT accept simple one word answers or generics e.g. light, cheap. Look for comparisons or reasons
Block foam <i>e.g. styrofoam</i>	Modelling 3D products	<i>e.g. lightweight, easy to shape, can take surface finishes e.g. filler, paint, vac forming.</i> Do NOT accept simple one word answers or generics as above. Do NOT accept simple one word answers or generics as above.
Laminated card	'tetrapack' fruit drink containers	<i>e.g. different materials give different properties</i> Do NOT accept simple one word answers or generics e.g. waterproof look for reasoning.
Biodegradable board	Fast food containers	<i>e.g. environmentally friendly, reduces pollution, save landfill, returns to natural materials</i> Do NOT accept simple one word answers or generics, as above.

In all cases above, a full reasoned explanation (2 marks)
 Some understanding evident, some lack of precision (1 mark)
 Incorrect or not attempted, one word answers (0 marks)

Maximum 18 marks

Question 5

(a) (i) **CAD Icons**

Icon Number 1 e.g. 'zoom in', magnify, enlarge screen image (1 mark)

Good understanding clearly explained (2 marks) (2 marks)
 Some understanding but less specific (1 mark)
 Incorrect, not attempted (0 marks)

Icon Number 2 e.g. colour OR fountain fill (NOT PAINT) (1 mark)

Good understanding clearly explained (2 marks) (2 marks)
 Some understanding but less specific (1 mark)
 Incorrect, not attempted (0 marks)

(ii) **Icon Number 3 Print Command**

- | | |
|--|---------------------|
| Good 2D representation of printer e.g. neat, clear | (2 marks) (2 marks) |
| Adequate representation- less precise, 3D drawing | (1 mark) |
| Incorrect, not attempted | (0 marks) |

(b) **CAD CAM**

- | | |
|---|---------------|
| Manipulation (<i>in any order</i>) | |
| Reference to either enlargement/crop/zoom | (2 x 1 marks) |
| Full understanding evident of each | (2 x 1 marks) |
| Incorrect, out of context, not attempted | (0 marks) |

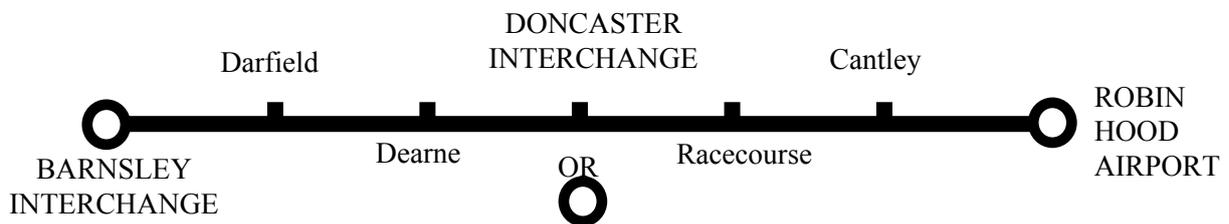
Maximum 12 marks

Question 6

Designers and Responsibilities

- (a) Name of designers: **HARRY BECK**
- | | |
|----------------------------|-------------------|
| Correct | (1 mark) (1 mark) |
| Incorrect or not attempted | (0 marks) |

(b) *e.g.*



Style *e.g. equidistant stops, straight line, symbols, one colour (not pencil grey)* (6 marks)

- | | |
|--|---------------|
| Good representation of style, neat, all distinctive features correct | (6 marks) |
| Adequate representation, most features used | (4 - 5 marks) |
| Adequate limited use of features, some inaccuracies | (2- 3 marks) |
| An attempt, vaguely in the style, a copy of example | (1 mark) |
| Not attempted | (0 marks) |

(c) Excellent understanding, fully reasoned and explained with several relevant points. Response well structured with good use of appropriate design and technology terminology and showing a good grasp of grammar, punctuation and spelling. (5 – 6 marks)

Some well-reasoned points, showing adequate understanding. Response fairly well structured with some use of appropriate design and technology terminology. A small number of errors in grammar, punctuation and spelling. (3 – 4 marks)

One point fairly well reasoned or some vague points, little understanding, some confusion, limited reasoning. Response poorly structured with little use of design and technology terminology and with numerous errors in grammar, punctuation and spelling. (1 – 2 marks)

No relevant evaluation presented (0 marks)

The following points should be taken into consideration when looking at candidate responses:

- clarity,
- colour
- stylisation
- simplification
- familiarity with style.

Maximum 15 marks

Question 7

Industrial Processes and Planning

(a) *Accept any effect* (2 marks)

(i) *Reasons (must relate to promotional literature/perfume)*

Clear explanation e.g. adds quality, visual appeal (2 marks)

Basic response answer e.g. descriptive/superficial (1 mark)

One word, no explanation (0 marks)

(ii) **Sketching** (2 marks)

Good, clear, informative sketched (2 marks)

An attempted, effect recognisable (1 mark)

Very confused, incorrect (0 marks)

Notes (2 marks)

Clear, concise annotation, relevant (2 marks)

An attempt, simple labels (1 mark)

Very confused, incorrect (0 marks)

- (b) (i) *Accept comments related to functionality and not appearance/surface decoration
e.g. flat back for ease of attachment, rounded corners, narrow 'break off' neck, outlet 'tube', ease of grip and use.*

A full and detailed analysis of the design with evaluation of its suitability as a container **and** the suitability of the container to be attached to the front of a magazine. Answers should include discussion of the positive and negative features of the design in relation to its function. (4-5 marks)

Some sound analysis of the design with some relevant comment on its suitability as a container and its suitability to be attached to the front of a magazine, or more detailed analysis of **one** of these areas. Answer may include some description as opposed to analysis. (3-4 marks)

Little/ no analysis of the design. One or two qualities mentioned, with little/no comment on **either** its suitability as a container, **or** its suitability to be attached to the front of a magazine. (1-2 marks)

No answer worthy of credit (0 mark)

- (ii) Advantage of hot melt glue

e.g. ease of application, neatness of assembled product, can be automated, reliable method, good adhesive qualities

Good, reasoned analysis of physical/economical properties	2 marks (2 marks)
Limited analysis, superficial comment	1 mark
Incorrect, not attempted	0 marks

Disadvantage of adhesive tape

e.g. unsightly, a tendency to rip the cover when container is removed

Good, reasoned analysis of physical/economical properties	2 marks (2 marks)
Limited analysis, superficial comment	1 mark
Incorrect, not attempted	0 marks

Total 15 marks

ADDITIONAL SAMPLE QUESTION

- (a) *A Smart Material is one which reacts with its surroundings/environment or other stimulus e.g. heat, light, moisture, voltage, in a known and predictable way.*

Full understanding clearly explained, example given	3 marks	(3 marks)
Limited understanding evident	2 marks	
A basic knowledge, confused.	1 mark	
Incorrect, not attempted	0 mark	

- (b) *The heat from the patient warms the thermochromatic crystals which are microencapsulated into the thin plastic carrier. As the crystals warm they change colour (to green) and the hottest contact shows this colour. The temperature scale is also graduated. The background colour (blue) reacts at a lower temperature.*

Full understanding clearly explained, example given	4 - 5 marks	(5 marks)
Limited understanding evident	2 - 3 marks	
A basic knowledge, confused.	1 mark	
Incorrect, not attempted	0 mark	

- (c) (i) *e.g. the manufacture would benefit from novelty of colour changing inks, market appeal, uniqueness.*

Full understanding clearly explained, example given	3 marks	(3 marks)
Limited understanding evident	2 marks	
A basic knowledge, confused.	1 mark	
Incorrect, not attempted	0 mark	

- (ii) *e.g. knowing the drink was at the right temperature, whether it wanted cooling for optimum quality, status (novelty)*

Full understanding clearly explained, example given	3 marks	(3 marks)
Limited understanding evident	2 marks	
A basic knowledge, confused.	1 mark	
Incorrect, not attempted	0 mark	

Total 14 marks