UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0445 DESIGN AND TECHNOLOGY

0445/12 Paper 12 (Design), maximum raw mark 50

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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UNIVERSITY of CAMBRIDGE
International Examinations

1 (a) Accept any **four** additional suitable points – stable in use, easy to remove, remotes can be seen easily, matches surroundings, etc. (1 × 4) [4]

(b) Accept drawings of any **two** protection methods – small contact surfaces, soft materials, rubber, foam, etc. (2 × 2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0–2)
Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc. (3–4)
High quality drawings using a wide range of techniques with clear annotation and detail (5–6)

Suitability

Simplistic designs showing outlines only (0–2)
Rather more detail, sensible solutions that could work (3–4)
Accurate solutions, good fitness for purpose, detailed construction (5–6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0–6)
Selection and justification. (1 + 1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)
Good line work, use of colour, proportions, some detail (2–3)
High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only – 1
Additional detail dimensions – 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0–2)
Most constructional detail may be obvious from overall views or with some annotation (3–4)
All constructional detail will be clear with good annotation and additional detail drawings as necessary (5–6) [12]

(f) Suitable **specific** materials stated. (2)
Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)
Good detailed description of: processes (3)
tools. (2) [6]

[Total: 50]

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2 (a) Accept any **four** additional suitable points – attract attention, minimal use of materials, easy to pack, minimal storage space, high-tech appearance, easy to see MP3, cannot see other items, etc. (1 × 4) [4]

(b) Accept any **two** access methods – tuck-in flaps, lift off top, adhesive surfaces, sliding sections, etc. (2 × 2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0–2)
Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc. (3–4)
High quality drawings using a wide range of techniques with clear annotation and detail (5–6)

Suitability

Simplistic designs showing outlines only (0–2)
Rather more detail, sensible solutions that could work (3–4)
Accurate solutions, good fitness for purpose, detailed construction (5–6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0–6)
Selection and justification. (1 + 1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)
Good line work, use of colour, proportions, some detail (2–3)
High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only – 1
Additional detail dimensions – 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0–2)
Most constructional detail may be obvious from overall views or with some annotation (3–4)
All constructional detail will be clear with good annotation and additional detail drawings as necessary (5–6) [12]

(f) Suitable **specific** materials stated. (2)
Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)
Good detailed description of: processes (3)
tools. (2) [6]

[Total: 50]

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3 (a) Accept any **four** additional suitable points – easy to operate, minimal space, stable in use, safe for child to use, appealing to child, etc. (1 × 4) [4]

(b) Accept any **two** types of battery – AAA, AA, C, D, PP3, disc type, etc. (2 × 2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0–2)
Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc. (3–4)
High quality drawings using a wide range of techniques with clear annotation and detail (5–6)

Suitability

Simplistic designs showing outlines only (0–2)
Rather more detail, sensible solutions that could work (3–4)
Accurate solutions, good fitness for purpose, detailed construction (5–6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0–6)
Selection and justification. (1 + 1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)
Good line work, use of colour, proportions, some detail (2–3)
High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only – 1
Additional detail dimensions – 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0–2)
Most constructional detail may be obvious from overall views or with some annotation (3–4)
All constructional detail will be clear with good annotation and additional detail drawings as necessary. (5–6) [12]

(f) Suitable **specific** materials stated. (2)
Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)
Good detailed description of: processes (3)
tools. (2) [6]

[Total: 50]

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