UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0445 DESIGN AND TECHNOLOGY

0445/23 Paper 2 (Graphic Products), 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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A1 **(a)** *Head*
Circle drawn (1)
Ø40 circle (1)

(b) *Arm*
Arm drawn (1)
Arm matches diameter(s) given (1)
Arm at 90° at elbow (1) [3]

(c) *Front leg*
60° to foot Ø (1)
Knee at correct height (1) [2]

(d) *Back leg*
60° to foot Ø (1)
Joins to knee at correct height (1) [2]

[Total: 9]

A2 **(a)** *Lettering*
Accuracy and proportion of:
R (1)
E (1)
Spacing (1)
Height (1) [4]

(b) *Border*
Complete border on Centre line (1)
Repeat angle (1) [2]

[Total: 6]

A3 **(a)** Isometric rectangular base (2)
Top rectangle 40 tall (1)
In line with base (1)
Sloping pillar top size 20 × 30 (1)
Sloping pillar base size 80 × 30 (1)
Sloping pillar evident 3 edges (1)
Semi-octagon top evident (1)
Construction of octagon evident (1) [9]

(b) Pencil tone to rectangle (1) [1]

[Total: 10]

B4 (a) *PLAN*
Length 190 (1)
Width 100 (1)
Front elevation
Depth of top 40 (1)
2 mm thickness to top surface & base (1)
2 mm thickness to sides (1) [5]

(b) *Hole positions and cone **C***
Centre line at 50 horizontally (1)
Centre of one hole 50 in from RHS (1)
Centre of one hole 50 in from LHS (1)
Centre line projected to F.E. (1)
Cone in position C on PLAN (1)
Circle representing top of cone (1)
Ø80 circle (1) [7]

(c) Ø10 evident in base on FE (1)
60 º included angle drawn (1)
60 º included angle drawn through Ø10 (1)
Ø80 projected from plan 2 × 1 (2)
Cone complete (2 × sides = 2) (top = 1) (3)
Centre line evident (1) [9]

(d) Hole size Ø56 ± 2 mm (1)
In remaining position (1)
Evidence of projection 0–2 pr (2) [4]

[Total: 25]

B5 (a) *EV*
Two sides to hexagon (1)
1st angle projection (1)
In line from plan (1)
Overall height 110 (1)
Angle of top 45 º (1)

PLAN
Hexagon drawn (1)
Hexagon correct size to scale (1)
Correct orientation (1)
Circle drawn for window (1)
Circle Ø30 (Ø60 to scale) (1) [10]

(b) *Development sides*
Six sides same width as given (1)
Joint in correct position (1)
Two long angled sides 2 × 1 (2)
Two short angled sides 2 × 1 (2)
One tall rectangle 110 (220 to scale) (1)

Development top
True length from EV for hexagon top (1)
Hex width plotted from plan (1)
Construction of ellipse evident from Plan (1)
Ellipse drawn to reference points (1) [11]

(c) *July*
Added (1)
On correct face (1)
In correct position (1)
Same style of lettering (1) [4]

[Total: 25]