CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0445 DESIGN AND TECHNOLOGY

0445/23	Paper 2 (Graphics 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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2015 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

CAMBRIDGE
International Examinations

Section A

A1 (a) (i) Plan
Circle added [1]
Circle correct to overlay [1]
Rectangle added for the left arm [1]
Rectangle correct to overlay [1] **[4]**

(ii) Front View
Right arm peg/hole correct to overlay (ignore type of line) [1]
Leg peg/hole correct to overlay (ignore type of line) [1]
All lines dashed regardless of size or position [1] **[3]**

(iii) Two concentric circles added [1]
Truncated cone matches the concentric circles [1]
Circles and truncated cone in correct positions and orientation for third angle projection
(cone on right) [1] **[3]**

A2 (a) Some tonal shading adding to the circle [1]
Shading makes the circle appear spherical (high and low light) [1] **[2]**

(b) <u>Sketches</u> and <u>notes</u> (or labels and arrows) show understanding that:
A stencil is a sheet of material with cut out shapes for the letters [1]
A pen or pencil is put into the cut out shapes and the letter drawn [1] **[2]**

A3 (a) Dome drawn to the right [1]
Flat added to the right side of the dome and left side of cuboidal chamber [1]
Top added to the cuboid shape [1]
Sloping side added to the left of the cuboid shape [1] **[4]**

(b) Three features of the former described. Tick (✓) to identify each feature. For example:
- Sloping sides (draft) [1]
- Smooth surface finish [1]
- Strength to withstand suction [1]
- Correct shape [1]
- Quality of materials
- Heatproof former etc. **[3]**

(c) (i) Triangular shape drawn [1]
Arrows added to the triangular shape [1] **[2]**

(ii) Typical answers:
It is better for the environment [1] because fewer trees need to be cut down [1]
Better for the environment [1] because less landfill is required [1]
*It is better for the image of the company [1] as it makes them appear environmentally
friendly [1]* **[2]**

[Total: 25]

© Cambridge International Examinations 2015

Section B

B4 (a) (i) Any circle drawn [1]
Circle of the correct size (Ø30) [1]
Circle position (on the given Centre line) [1] **[3]**

(ii) Any triangle drawn [1]
Equilateral triangle drawn [1]
Equilateral triangle of correct size drawn (side 30 mm) [1]
Triangle position (on the given Centre line) [1]
Triangle in the correct orientation [1] **[5]**

(iii) Any Hexagon drawn [1]
Regular hexagon drawn [1]
Regular hexagon of the correct size drawn (side 20 mm) [1]
Hexagon position (on the given Centre line) [1]
Hexagon in the correct orientation [1] **[5]**

(b) Circle drawn [1]
Circle divided into any four sectors [1]
One mark for each sector correct to overlay (1×3)
Appropriate identification used (at least three sectors) [1]
Appropriate labels for sales used (at least three sectors) [1] **[7]**

(c) (i) Aided, Aid or Assisted [1]
Design [1] **[2]**

(ii) Tick (✓) to identify the following stages:
- Highlight or Right click on image [1]
- Menu –Copy [1]
- Cursor to new page / program [1]
- Menu –Paste / click to position [1]
(or alternative methods of copying and pasting) **[3]**

[Total: 25]

© Cambridge International Examinations 2015

Section B

B5 (a) (i) Card or paper [1]
Expanded polystyrene [1] or polystyrene foam
(Do not accept 'foam')   **[2]**

(ii) Scalpel, blade, craft knife or Stanley knife [1]
(Do not accept 'knife')
Steel rule, Safety rule [1]
(Do not accept 'rule')   **[2]**

(iii) Example [1] Justification [1]
e.g:
Easy to cut / so shapes can be made easily
Has a smooth surface / that you can print pictures on
Rigid / so easy to slot pieces together
Has thickness / so easy to pick up
(Do not accept 'cheap')   **[2]**

(b) Any enlarged cross [1]
Enlarged cross has four correct elements (to overlay)   (4 × 1)
Evidence of a V.P. (1)
Projection lines from V.P. to enlarged cross   (4 × 1) **[10]**

(c) Isometric drawing [1]
Length (70 mm) allow if isometric incorrect [1]
Width (70 mm) only if isometric correct [1]
*Height (10) [1]
*Inner square drawn to top surface [1]
Inner square correct to overlay [1]
*Some depth drawn to the inner square [1]
Right side depth of inner square correct to overlay [1]
Left side depth of inner square correct to overlay [1]   **[9]**

* marks can be awarded for non-isometric 3D solutions

                                                                                                  [Total: 25]