

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

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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)** Sketches and notes (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]

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Section B

- B4 (a) (i)** Any circle drawn [1]
Circle of the correct size ($\varnothing 30$) [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]**

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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

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