MARK SCHEME for the October/November 2014 series

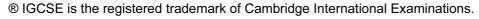## 0445 DESIGN AND TECHNOLOGY

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.

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 October/November 2014 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

A1 (a) End view

Left upright and deck correct to overlay [1]
Cabin correct to overlay [1]
Right half of windscreen added [1]
Curves to corners of windscreen [1]

Plan

Front diagonal and horizontal line correct to overlay [1]
Back curve to overlay [1]
Vertical line added to show top of roof [1]
Windscreen added with curved corners [1]   [8]

(b) Small circle correct to small end of truncated cone [1]
Large circle correct to large end of truncated cone [1]

*Award one mark for two concentric circles that do not match the truncated cone   [2]

A2 (a) Correct colour (brown/yellow/orange) used [1]
Some grain added [1]
High quality rendering (side grain matches end grain)   [3]

(b) 'u' added in similar style to that given [1]
'n' added in similar style to that given [1]
High quality 'u' and 'n' in terms of width, height and spacing [1]   [3]

A3 (a) Back and front of the correct size and position drawn [1]
Second side drawn [1] or accurately and in correct orientation [2]
Concentric circles added [1]
Sufficient glue tabs to hold the model together (must have fold lines) [1]   [5]

(b) Drawing board [1]
Set square drawn [1]   [2]

(c) Method: Lithography or digital printing [1]
Reason: Cost effective, quick... [1]
Do not accept cheap   [2]

[Total: 25]

B4 (a) (i) Major axis 80 mm [1]
Minor axis 60 mm [1]
Some construction visible [1] or clear construction visible [2]
(award if major and/or minor axis incorrect)
At least four points correctly plotted [1] or more than six points correctly plotted [2]
(award if major and/or minor axis incorrect)
Profile correct to overlay [1]
Any circle drawn on centre lines [1]
Circle correct to overlay [1]
Outer triangle correct to overlay [1]   [10]

(ii) Right half of bottom line to overlay [1]
Left half of bottom line to overlay [1]
Bottom half of upright line to overlay [1]
Top half of upright line to overlay [1]
Right half of top line to overlay [1]
Left half of to line to overlay [1]
Diagonal line to overlay [1]
R10 radius to overlay [1]   [8]

(b) (i) For cutting out the design:
Craft knife [1]
Cutting mat [1]
Safety rule [1]   [3]

(ii) For applying the design to the foam board:
Pritt stick, PVA, double sided tape, spraymount... [1] Do **not** accept glue   [1]

(c) Sketches and notes (or labels) show:
A modification (addition or use of existing material) to the tail [1]
Modified stand will stand on a flat surface [1]
Consideration/understanding of how the foam board will fold [1]   [3]

[**Total: 25**]

B5 (a) (i) Drawing on the correct surface (accept circle) [1]
Drawing of an ellipse in correct orientation [1]
Thickness of ellipse shown [1]   [3]

(ii) Lines projected from surface X on front view [1]
Lines at right angles from surface X [1]
Correct length to overlay [1]
Shape lined in to overlay [1]   [4]

(b) Circle drawn [1]
Circle divided into 4 sectors [1]
Data correctly plotted [1]
Labels identify the four parts of the pie chart [1]
Colour used to enhance the pie chart [1]   [5]

(c) Mark to overlay (award if box drawn on end)
Isometric [1]
*Overall height [1]
*Overall width [1]
*Overall thickness [1]
Some construction for top ellipse [1]
Clear construction for top ellipse [1]
Top ellipse correct to overlay [1]
Some construction for bottom ellipse [1]
Bottom ellipse correct to overlay [1]
Two uprights correct to overlay [1]
*Award only these marks if 3D but not isometric   [10]

(d) Award one mark for each further specification point for the carton or cap up to a maximum of three marks. For example:
• Must be able to print on the surface of the carton.
• Material for the carton must be tough so that it does not split.
• Plastic cap must easily be removed.
• Must be able to be mass produced   [3]

[Total: 25]