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**DESIGN AND TECHNOLOGY**

**0445/13**

Paper 1 Product Design

**May/June 2017**

MARK SCHEME

Maximum Mark: 50

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**Published**

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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This document consists of **3** printed pages.

Question	Answer	Marks
1(a)	Accept any <b>four</b> additional suitable points – easy to access, hygienic, easy to clean, food does not blow away, water does not spill. Accept other valid responses. <span style="float: right;">1×4</span>	<b>4</b>
1(b)	Accept drawings of any <b>two</b> suitable methods – recess in surface, edge around feeder, cover on feeder, receptacles fixed down/screwed/clipped. Accept other valid responses. <span style="float: right;">2×2</span>	<b>4</b>

Question	Answer	Marks
2(a)	Accept any <b>four</b> additional suitable points – attractive colour/shape, easy to store, manageable size, easy to hold, easy to open. Accept other valid responses. <span style="float: right;">1×4</span>	<b>4</b>
2(b)	Accept drawings of any <b>two</b> sealing methods – fold in flap/tab, plastic cap, plug, clip, zip. Accept other valid responses. <span style="float: right;">2×2</span>	<b>4</b>

Question	Answer	Marks
3(a)	Accept any <b>four</b> additional suitable points – hygienic, easy to clean, easy access for animals, does not scare animals, quiet in use. Accept other valid responses. <span style="float: right;">1×4</span>	<b>4</b>
3(b)	Accept drawings of any <b>two</b> control methods – flap, sliding door, conveyer belt, buckets, spiral. Accept other valid responses. <span style="float: right;">2×2</span>	<b>4</b>

Question	Answer	Marks
1, 2 and 3(c)	Any suitable ideas. At least <b>three different</b> ideas for maximum marks. Pro rata if fewer.	
	<p><b>Communication</b> 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. 3–4 High quality drawings using a wide range of techniques with clear annotation and detail. 5–6</p>	<b>6</b>
(d)	Suitability Simplistic designs showing outlines only. 0–2 Rather more detail, sensible solutions that could work. 3–4 Accurate solutions, good fitness for purpose, construction detail. 5–6	<b>6</b>
	Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each.	<b>6</b>
	Selection and justification. 1+1	<b>2</b>
(e)	<p><b>Quality of drawing</b> 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</p>	<b>4</b>
	<p><b>Dimensions</b> 2 or 3 overall dimensions only 1 Additional detail dimensions 1</p>	<b>2</b>
	<p><b>Construction detail</b> A simplistic approach showing little or no detail of construction to be used. 0–2 Most construction detail may be obvious from overall views or from some annotation. 3–4 All construction detail will be clear with good annotation and additional detail drawings as necessary. 5–6</p>	<b>6</b>
(f)	Suitable <b>specific</b> materials stated. 1+1	<b>4</b>
	Appropriate reasons for choice. 1+1	
(g)	Suitable method described. 1	<b>6</b>
	Good detailed description of: processes 0–3 tools 0–2	