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**DESIGN AND TECHNOLOGY**

**0445/13**

Paper 1 Product Design

**October/November 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, lightweight, stackable, portable, stands by itself, waterproof, place to hang leather. AOVR 1 × 4	4
1(b)	Accept drawings of any <b>two</b> draining methods – through holes, slots, cut away edge, grill, inclined surface. AOVR 2 × 2	4

Question	Answer	Marks
2(a)	Accept any <b>four</b> additional suitable points – attractive colour/shape, has impact, easy to transport, folds up, reflects car brand, easy to access brochures. AOVR 1 × 4	4
2(b)	Accept drawings of any <b>two</b> joining methods – tabs and slots, 'velcro', clips, rings, tape. AOVR 2 × 2	4

Question	Answer	Marks
3(a)	Accept any <b>four</b> additional suitable points – easy to fit torch, does not damage torch, adjustable angle/height, access to switch, stable, foldable. AOVR 1 × 4	4
3(b)	Accept drawings of any <b>two</b> adjusting mechanisms – bolt and wingnut, screw thread, slot, telescopic arm, flexible arm. AOVR 2 × 2	4

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.  <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 [max 6 marks]  <b>Suitability</b> 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 [max 6 marks]	12

Question	Answer	Marks
1, 2 and 3 (d)	Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each. [max 6 marks]	<b>8</b>
	Selection and justification. 1 + 1 [max 2 marks]	
1, 2 and 3 (e)	<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 [max 4 marks]	<b>12</b>
	<b>Dimensions</b> 2 or 3 overall dimensions only 1 Additional detail dimensions 1 [max 2 marks]	
	<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 [max 6 marks]	
1, 2 and 3 (f)	Suitable <b>specific</b> materials stated. 1 + 1	<b>4</b>
	Appropriate reasons for choice. 1 + 1	
1, 2 and 3 (g)	Suitable method described. 1	<b>6</b>
	Good detailed description of: processes 0–3 tools 0–2	