Cambridge International AS & A Level

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DESIGN AND TECHNOLOGY **9705/11**

Paper 1 **October/November 2018**

MARK SCHEME

Maximum Mark: 120

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.

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

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2018 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Section A

Question	Answer	Marks
1(a)	Suitable plastic named (1 mark) e.g. acrylic (Perspex), high density polystyrene, ABS, polythene flexible PVC Suitable reason given (1 mark) e.g. suitable for vacuum forming, ready coloured, available in sheet form, no finish required (0–2)	**2**
1(b)	Vacuum forming process described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**
1(c)	Turning process described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**
1(d)	Soldering process described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**

Question	Answer	Marks
2(a)	Size between 162–165 (1 mark) Size between 220–223 (1 mark) (0–2)	**2**
2(b)	Work plan produced which shows stages in a clear and logical order (0–2) Appropriate processes for drawing development, cutting out and assembling envelope described (0–2) Details of appropriate tools, equipment and safety precautions (0–2)	**6**
2(c)	Position of 4 glue tabs of correct size shown anywhere on part **A** (0–2) Position of 4 glue tabs of correct size shown with a degree of accuracy (0–2 marks) **OR** Position of 4 glue tabs of correct size shown with a good degree of accuracy (0–4 marks) (0–4)	**6**
2(d)	Backing card part **A** (0–2) Pop up **B** (0–2) Pop up **C** (0–2) Maximum 2 marks for a 2D view	**6**

Question	Answer	Marks
3(a)	Reference made to safe (1 mark) Not poisonous or harmful (1 mark) (0–2)	**2**
3(b)(i)	Appropriate method of making part **A** described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**
3(b)(ii)	Appropriate method of making part **B** described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**
3(b)(iii)	Appropriate joining method using panel pine and glue described (0–3) Details of appropriate tools, equipment and safety precautions (0–3)	**6**

Section B

Question	Answer	Marks
4(a)	Appropriate explanation related to quality and safety standards (0–2) **A** The CE mark certifies that a product has met European Union health, safety and environmental requirements which ensure consumer safety **B** British standards Kitemark means the British Standards Institute (BSI) has independently tested a product, confirmed that the product conforms to the relevant British Standard and has issued a licence to the company to use the Kitemark **C** Forest Stewardship Council indicates that the material has come from managed, sustainable sources	**2**
4(b)	Problem two identified and described (0–2) Problem one identified and described (0–2) E.g. Unit will be unstable when stacked and/or used alongside other units particularly when a number of the drawers are pulled out at the same time. There are no visible signs of how the units could be fixed to a wall and each other	**4**
4(c)	Explanation of how problem one could be overcome (0–3) Explanation of how problem two could be overcome (0–3) E.g. Making units more stable by showing methods that show how the units could be fixed to a wall and to each other.	**6**
4(d)(i)	Situation has been analysed and relevant issues/points identified (0–3)	**3**
4(d)(ii)	Clear and appropriate explanations of why issues/points are considered relevant (0–3)	**3**
4(d)(iii)	Specific examples/evidence used to support conclusions (0–2)	**2**

Question	Answer	Marks
5(a)	This gives the packaging a depth (1 mark) which will enable the DVD and the booklet to more easily fit inside the packaging (1 mark) (0–2)	**2**
5(b)	Problem two identified and described (0–2) Problem one identified and described (0–2) E.g. Still a problem fitting contents inside packaging because there is only one double fold line. Very hard to get fingers inside packaging to remove contents	**4**
5(c)	Explanation of how problem one could be overcome (0–3) Explanation of how problem two could be overcome (0–3) e.g. Add two more double fold lines Add a finger cut out	**6**
5(d)(i)	Situation has been analysed and relevant issues/points identified (0–3)	**3**
5(d)(ii)	Clear and appropriate explanations of why issues/points are considered relevant (0–3)	**3**
5(d)(iii)	Specific examples/evidence used to support conclusions (0–2)	**2**

Question	Answer	Marks
6(a)	Dip coating is a thermal process (1 mark) The plastic melts onto the hot metal and coats the surface (1 mark) (0–2)	**2**
6(b)	Problem two identified and described (0–2) Problem one identified and described (0–2) E.g. The process requires air to be blown into the bottom of the tank, this is not shown in the diagram. The air needs to be blown through a layer of fine mesh in order to fluidise the plastic; the layer of fine mesh is not shown in the diagram.	**4**
6(c)	Explanation of how problem one could be overcome (0–3) Explanation of how problem two could be overcome (0–3) e.g. A suitable air inlet pipe is added A suitable layer of fine mesh is added	**6**
6(d)(i)	Situation has been analysed and relevant issues/points identified (0–3)	**3**
6(d)(ii)	Clear and appropriate explanations of why issues/points are considered relevant (0–3)	**3**
6(d)(iii)	Specific examples/evidence used to support conclusions (0–2)	**2**

Question	Answer	Marks
7(a)	One pre-conceived idea presented (0–4) **OR** The development and selection of a range of ideas into a single design proposal which would appear to work but lacks some technical detail (5–8) **OR** The development and selection of a range of ideas into a single design proposal which includes sufficient technical detail to show that the proposed solution would clearly work (9–12) Clarity and quality of sketching and explanatory notes (0–4) Evaluations (reasons for selection) (0–4)	**20**
7(b)	As for part **(a)**	**20**
7(c)	As for part **(a)**	**20**

Question	Answer	Marks
7(d)	The drawing will exhibit a reasonable standard of outcome and show some of the required design features required to make the product function as intended (0–5) **OR** The drawing will exhibit a good standard of outcome and show most of the design features required to make the product function as intended (6–9) **OR** The drawing will be completed to a high standard of outcome and fully show the design features required to make the product function as intended (10–14) Some use made of colour and tone to enhance the visual impact of the drawing (0–2) **OR** Good use has been made of colour and tone to enhance the visual impact of the drawing (3–4) **OR** Very good use has been made of colour, tone and material representation to enhance the visual impact of the drawing (5–6)	**20**

Questions 8 and 9 as for question 7