

**MARK SCHEME for the October/November 2009 question paper  
for the guidance of teachers**

**7048 CDT: DESIGN AND COMMUNICATION**

**7048/01**

Paper 1, maximum raw mark 100

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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| Page 2 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|          |  |  |  |      |  |
|----------|--|--|--|------|--|
| <b>1</b> | <b>(a)</b>   | Front height and width - to overlay (2 x 1) 70 x 120   | 2  |      |  |
|          |  | Plan width and depth - to overlay (2 x 1) 120 x 90   | 2  |      |  |
|          |  | End height and depth - to overlay (2 x 1) 70 x 90  | 2  |      |  |
|          |  | <b>Front view</b>  |  |      |  |
|          |  | Door position (10mm from right hand side)  | 1  |      |  |
|          |  | Door size to overlay (55 x 20)   | 1  |      |  |
|          |  | Window position (10mm from door)   | 1  |      |  |
|          |  | Window size to overlay (40 x 40)   | 1  |      |  |
|          |  | <b>End view</b>  |  |      |  |
|          |  | Window position (10mm from right hand side)  | 1  |      |  |
|          |  | Window size to overlay (30 x 40)   | 1  | [12] |  |
|          |  | <b>(b)</b>   | First part of symbol drawn correctly (two circles) | 1    |  |
|          |  | Second part of symbol drawn correctly (truncated cone that matches the circles and lines up) | 1  |      |  |
|          |  | Outline of <b>three</b> views projected (lined up)   | 1  |      |  |
|          |  | Symbol matches projection method used for all three views                                    | 1  | [4]  |  |
|          | <b>(c)</b>   | Ellipse the correct size - minor and major (2 x 1)   | 2  |      |  |
|          | Evidence of construction of ellipse                              | 1  |  |      |  |
|          | High quality freehand outline of ellipse (to overlay)            | 1  |  |      |  |
|          | Isometric box any size added (30 degree lines)                   | 1  |  |      |  |
|          | Isometric 'string' added to any size box                         | 1  |  |      |  |
|          | Isometric box sizes complete and accurate to overlay             | 1  | [7]  |      |  |
|          | <b>(d)</b>   | Outline - 45 degree line at right hand top   | 1  |      |  |
|          | Outline - back horizontal  | 1  |  |      |  |
|          | Other lines may be present (inside detail)                       |  |  |      |  |
|          | Door to the overlay  | 1  |  |      |  |
|          | Front window to the overlay                                      | 1  |  |      |  |
|          | End window (size 15 x 40 and 5mm from corner)                    | 1  |  |      |  |
|          | Outline of shop sign added (freehand)                            | 1  |  |      |  |
|          | Lettering and box added  | 1  | [7]  |      |  |
|          | <b>(e)</b>   | Colour relates to the theme 'bright and bold' - not pastel colours                           | 1  |      |  |
|          | Overall quality of colour application                            |  |  |      |  |
|          | Excellent 3, good 2 and fair 1                                   |  |  |      |  |
|          | Excellent - even tone, accurate to borders, window considered... |  |  |      |  |
|          | Good - mainly completed but uneven tone and some inaccuracies    |  |  |      |  |
|          | Fair - evidence of some colour application                       | 3  | [4]  |      |  |

**[Total: 34]**

| Page 3 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|              |   |   |      |
|--------------|---|---|------|
| <b>2 (a)</b> | Isometric projection used from given start point - evidence of correct orientation                  |   |      |
|              | No marks for 2D or 45 degree oblique  | 1 |      |
|              | <b>Right half of counter</b>  |   |      |
|              | Height (correct to overlay) 80mm  | 1 |      |
|              | Depth (correct to overlay) 120mm  | 1 |      |
|              | Width (correct to overlay) 60mm   | 1 |      |
|              | Inner end correct to candidate solution   | 1 |      |
|              | Two rails in position and approx. size (2 x 1) (any orientation)                                    | 2 |      |
|              | Thickness of top and ends shown (3 x 1)   | 3 |      |
|              | <b>Left half of counter</b>   |   |      |
|              | Height (correct to overlay) 100mm   | 1 |      |
|              | Depth (correct to overlay) 50mm   | 1 |      |
|              | Width (correct to overlay) 90mm   | 1 |      |
|              | Thickness of top and ends   | 1 |      |
|              | Inner end completed to candidate solution   | 1 | [15] |
| <b>(b)</b>   | Upper dowel completed - socket and dowel (2 x 1) (approximate proportion and position to one given) | 2 |      |
|              | Vertical outline completed  | 1 |      |
|              | Hatching <u>consistent</u> and in <u>opposite directions</u> on adjacent parts (2 x 1)              | 2 | [5]  |
| <b>(c)</b>   | <b>Step 2</b>   |   |      |
|              | Mallet shown  | 1 |      |
|              | Tapping dowel into hole   | 1 |      |
|              | <b>Step 3</b>   |   |      |
|              | Second piece pushed (arrow) onto dowel  | 1 |      |
|              | <b>Step 4</b>   |   |      |
|              | Excess glue removed   | 1 |      |
|              | <b>Step 5</b>   |   |      |
|              | Pressure applied  | 1 |      |
|              | Indication of time (accept clock, 24h not 24 hours)   | 1 |      |
|              | Overall quality of sketching (arrows and letters acceptable - ignore words)                         |   |      |
|              | Good 2, satisfactory 1 and poor 0   | 2 | [8]  |
| <b>(d)</b>   | Suitable colour chosen (brown or yellow)  | 1 |      |
|              | Looks like wood (grain)   | 1 |      |
|              | High quality rendering (3D effect/shadow)   | 1 |      |
|              | Colour applied  | 1 |      |
|              | Looks like plastic (reflections)  | 1 |      |
|              | High quality rendering (3D effect/shadow)   | 1 | [6]  |

**[Total: 34]**

| Page 4 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|   |   |                    |      |
|---|---|--------------------|------|
| <b>3 (a)</b>  | Six connected surfaces shown  | 1                  |      |
|   | Six surfaces correct to overlay (6 x 1)   |                    |      |
|   | If error in sizes of one side, do not award mark but award marks for error carried forward to other sides. Allow tolerance of plus or minus 5mm on sloping surface of lid | 6                  |      |
|   | Two further glue tabs shown, of an appropriate size and with angled ends (2 x 1) Any base position  | 2                  |      |
|   | Only two glue tabs in correct position/s (2 x 1)  | 2                  |      |
|   | Each fold in flap drawn, of an appropriate size and position, with curved ends (3 x 1)  | 3                  |      |
|   | Some fold lines shown (1) or all fold lines shown to the convention given (2)   | 2                  | [16] |
|   | <b>(b)</b>  |                    |      |
|   | Stand will stand on a flat surface  | 1                  |      |
|   | Stand will hold a packet of sweets  | 1                  |      |
| Surface graphics show a range of sweets available                       | 1   |                    |      |
| Surface graphics show customer can choose sweets                        | 1   |                    |      |
| Notes evident   | 1   |                    |      |
| Sketches - good 2 or satisfactory 1                                     | 2   | [7]                |      |
| <b>(c)</b>  |   |                    |      |
| Three dimensional sketch  | 1   |                    |      |
| Recognised format of sketch (isometric/plan metric/oblique)             | 1   |                    |      |
| Quality of line work - parallel lines                                   |   |                    |      |
| Good 2 or 1 satisfactory  | 2   |                    |      |
| Faces of stand have the appearance of acrylic                           |   |                    |      |
| 3 faces 3, 2 faces 2 or 1 face 1  | 3   |                    |      |
| Colour added  | 1   |                    |      |
| Overall quality of colour enhancement - tone, shadow, light and dark... |   |                    |      |
| 2 good or 1 satisfactory  | 2   | [10]               |      |
|   |   | <b>[Total: 33]</b> |      |

| Page 5 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|              |  |   |                    |
|--------------|--|---|--------------------|
| <b>4 (a)</b> | <b>Three dimensional sketch shows...</b>   |   |                    |
|              | Large square box   | 1 |                    |
|              | Round box  | 1 |                    |
|              | Small square box   | 1 |                    |
|              | Boxes well drawn in correct orientation/position   | 1 |                    |
|              | <b>Three dimensional sketch shows...</b>   |   |                    |
|              | Square box   | 1 |                    |
|              | Triangular box   | 1 |                    |
|              | Round box  | 1 |                    |
|              | Boxes well drawn in correct orientation/position   | 1 |                    |
|              | <b>Three dimensional sketch shows...</b>   |   |                    |
|              | Octagonal box  | 1 |                    |
|              | Square box   | 1 |                    |
|              | Triangular box   | 1 |                    |
|              | Boxes well drawn in correct orientation/position   | 1 | [12]               |
| <b>(b)</b>   | 'E' drawn in good proportion and position  | 1 |                    |
|              | Any triangle drawn in correct location   | 1 |                    |
|              | 'P' drawn in good proportion and position (upright 1 and curve 1)                                  | 2 |                    |
|              | Any hexagon drawn in correct location  | 1 |                    |
|              | 'S' drawn in good proportion and position (1 for each curve)                                       | 2 |                    |
|              | Any octagon drawn in correct location  | 1 | [8]                |
|              | No marks for lower case letters or letters without thickness. They do not need to line up exactly. |   |                    |
| <b>(c)</b>   | Idea for a pop-up mechanism shown  | 1 |                    |
|              | Idea for a pop-up mechanism that will clearly work   | 1 |                    |
|              | Notes evident (not just labels)  | 1 |                    |
|              | Quality of sketches - good 2 or satisfactory 1   | 2 | [5]                |
| <b>(d)</b>   | Three dimensional sketch of label  | 1 |                    |
|              | Folded label shown in the open position  | 1 |                    |
|              | 'L' clearly visible  | 1 |                    |
|              | Mechanism clearly visible  | 1 |                    |
|              | Quality of sketch  |   |                    |
|              | Good 2 or satisfactory 1   | 2 |                    |
|              | Quality of colouring   |   |                    |
|              | Good 2 or satisfactory 1   | 2 | [8]                |
|              |  |   | <b>[Total: 33]</b> |

| Page 6 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|              |  |   |                    |
|--------------|--|---|--------------------|
| <b>5 (a)</b> | <b>Mark to overlay</b>   |   |                    |
|              | One piece symmetrical development (net)  | 1 |                    |
|              | Shape of symmetrical net - bottom strip (1) two ends (2) and two overhangs (2) | 5 |                    |
|              | Net length within 5mm (2) or within 10mm (1)                                   | 2 |                    |
|              | Net the correct height (50mm)  | 1 |                    |
|              | Depth of bottom strip (25mm)   | 1 |                    |
|              | Any cut out in the central position  | 1 |                    |
|              | Top cut out 110mm in length  | 1 |                    |
|              | Outer shape clearly distinguishable from construction lines                    | 1 | [13]               |
| <b>(b)</b>   | Top of correct shape shown (folded acrylic)                                    | 1 |                    |
|              | Idea relates to the top (material added or removed)                            | 1 |                    |
|              | Idea will hold the watch (1) in display area (1)                               | 2 |                    |
|              | Overall quality of sketches  |   |                    |
|              | Good 2 or satisfactory 1   | 2 | [6]                |
| <b>(c)</b>   | Range of ideas (at least two ideas)  | 1 |                    |
|              | Ideas based on 'Diving' - word or images                                       | 1 |                    |
|              | Idea drawn on a rectangle (label) not stand                                    | 1 |                    |
|              | Supporting notes   | 1 |                    |
|              | Quality of design - good 2 or satisfactory 1                                   | 2 | [6]                |
| <b>(d)</b>   | Quality of sketch  |   |                    |
|              | Base - any pictorial view (1) high quality (1)                                 | 2 |                    |
|              | Top - any pictorial view (1) high quality (1)                                  | 2 |                    |
|              | Label - placed on base (1) high quality (1)                                    | 2 |                    |
|              | Overall quality of colour enhancement  |   |                    |
|              | Colour applied (1) shows acrylic (1)   | 2 | [8]                |
|              |  |   | <b>[Total: 33]</b> |

| Page 7 | Mark Scheme: Teachers' version      | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE O LEVEL – October/November 2009 | 7048     | 01    |

|                             |   |     |     |
|-----------------------------|---|-----|-----|
| <b>6 (a)</b>                | Circle used (any size)  | 1   |     |
|                             | Correct division of circle to overlay 1 x 5<br>(M - 30, T - 55, W - 40, Th - 25, F - 90 & S - 120)  | 5   |     |
|                             | Use of appropriate key to identify segments (days or money) Minimum of four segments identified   | 1   |     |
|                             | Use of colours<br>(Minimum of four segments coloured or hatched)  | 1   | [8] |
| <b>(b)</b>                  | 'Bars' drawn (1) or six bars of same width (2)  | 2   |     |
|                             | All bars labelled (months) or keyed   | 1   |     |
|                             | June largest (bar 1 - 1), August smallest (bar 3 - 1), September and October the same (bar 4/5 - 1), July just larger than November (bar 2/6 - 1) | 4   |     |
|                             | Use of colours<br>(Minimum of four bars coloured)   | 1   | [8] |
| <b>(c)</b>                  | Six steps shown with text   | 1   |     |
|                             | All boxes the same width as given   | 1   |     |
|                             | Three process boxes   | 1   |     |
|                             | Last box shown as an end box  | 1   |     |
|                             | Decision box (must be check coins) (1), after count coins (1), feedback loop shown (1), with yes and no (1)                                       | 4   | [8] |
| <b>(d) Mark to overlay</b>  | Arcs correct to overlay (20mm radius)   |     |     |
|                             | 3 correct - 2 marks, 2 - 1 mark or less - 0 marks   | 2   |     |
|                             | Spacing between arcs correct (15mm)   |     |     |
|                             | 3 correct - 2 marks, 2 - 1 mark or less - 0 marks   | 2   |     |
|                             | Distance between centres correct (100mm)  | 1   |     |
|                             | Small base arc (20mm radius)  | 1   |     |
|                             | Large base arc (65mm radius)  | 1   |     |
| 45 degree ends (2 x 1 mark) | 2   | [9] |     |

[Total: 33]