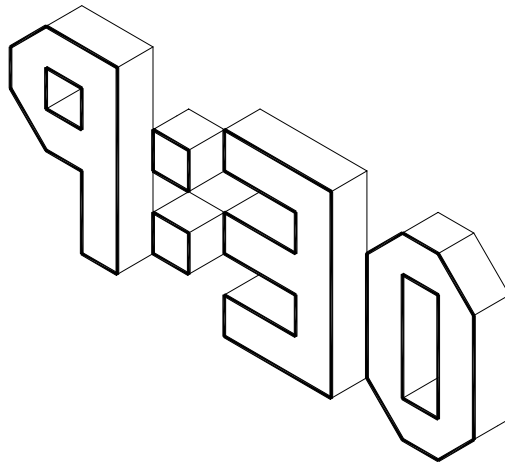




Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination 2005

Technical Graphics
Ordinary Level



Marking Scheme

Sections A and B

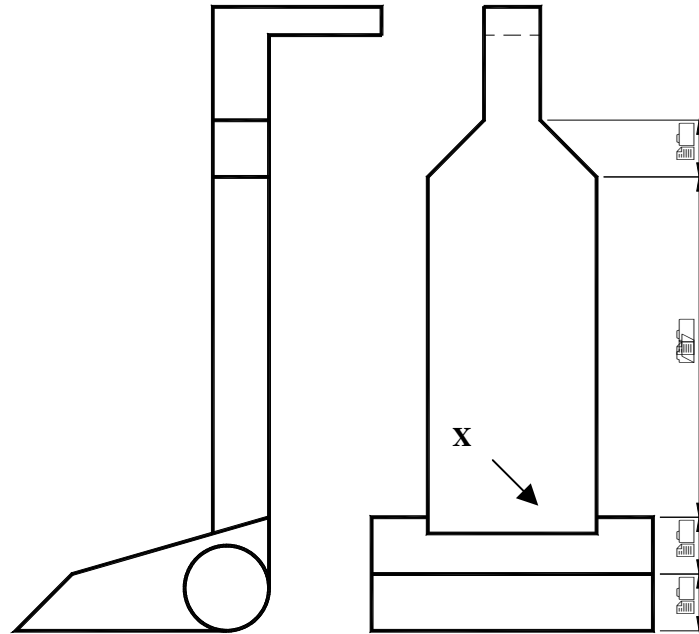
Section A

Award 2 marks for setting up the outline of each solution in this section.

Q1	12	2 marks for each correct line in the elevation.
Q2	12	Dog kennel correctly depicted in a <u>good quality</u> freehand pictorial sketch.
Q3	6	VDU/Monitor/Screen
	6	Mouse
Q4	12	Correct rectangle
Q5	4	Locating focal points
	4	A is the Minor Axis
	4	B is the Major Axis
Q6	9	Well proportioned freehand orthographic sketch.
	3	Application of shading OR colour.
Q7	12	2 marks for each line
Q8	12	A = 0.7M ; B = 0.8M anything else 2 for the attempt
Q9	12	7.5 blocks (8 blocks) 7/8.5 blocks give 8 marks
Q10	12	3 marks for each line.
Q11	8	8 marks elevation, 2 marks each, height, width, window, regular shape.
	4	4 marks end elevation, 1 mark each, height, width, + 2 completion.
Q12	3	3 x 1 each Projections to the vertical plane.
	6	Outline figure, 1 mark each line.
	3	Shading.
Q13	12	Correct construction to locate the centre of arc A.
Q14	10	Projections to the V.P's, 2 marks each line
	2	2 marks vertical line
Q15	12	Correct position of reflector.

Marking Scheme - Section B - 2005

Q.1 Orthographic Projection



Orthographic Outline (10)

Elevation (20)

- 8 1 mark each line
- 8 4 marks each sloping lines
- 4 4 circle

End Elevation (24)

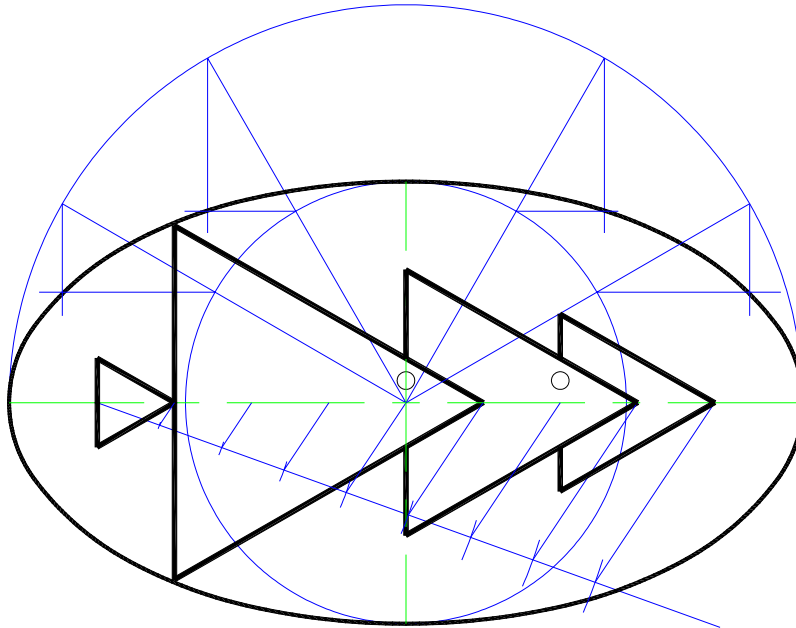
- 19 1 mark each line + 3 marks each sloping line x 2
- 1 1 mark hidden detail
- 4 correct projection of line x.

Dimension lines (4)

- 4 1 mark each line

Draughting, accuracy and presentation (12)

Q.2 Ellipse



Ellipse (28)

- 8 Major & Minor axis, 4 marks each
- 14 **Locating points on the curve**
- 6 Drawing curve

Setting up (18)

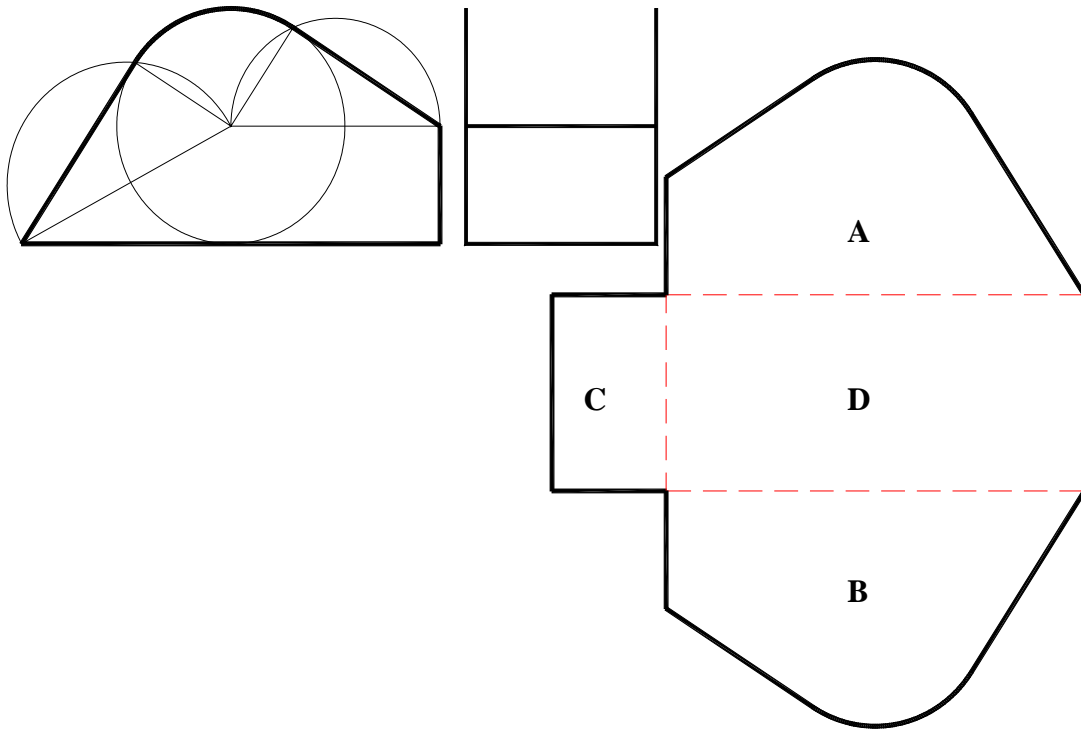
- 4 Fixing 140mm line, 2 + 2 correct position
- 8 Fixing offsets, 8 x 1 mark each
- 6 **Dividing 140mm line into 8 equal parts**

Completing Buttons (12)

- 12 3 each triangle x 4

Draughting, accuracy and presentation (12)

Q.3 Surface Development



Orthographic Outline (21)

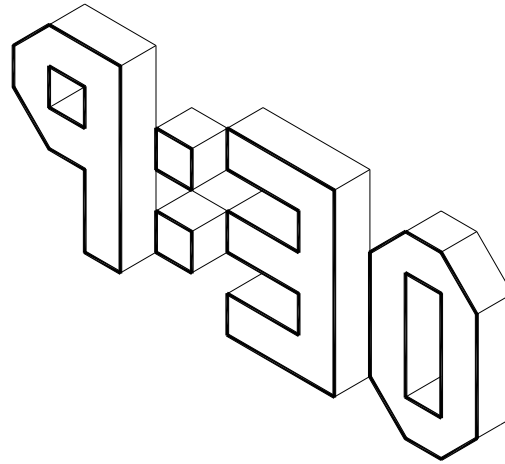
- 3 End elevation in correct position
- 10 Elevation, 2 marks each line + 2 arc
- 4 End elevation, 1 mark each line
- 4 Locating points of contact, 2 marks each.

Draughting, accuracy and presentation (12)

Development (37)

- 20 Sides A and B, 2 marks each line + 2 each arc
- 10 Sides C and D, 2 marks each line
- 3 **Fold lines**, 1 mark each
- 4 **One piece development**

Q.4 Isometric Projection



Setting Up (14)

- 9 Outline height, length and width
(deduct 2 each if inaccurate)
- 5 Isometric outline
(deduct 3 + 3 if 30° angles are not used)

Front Face 9:30 (22)

- | | | | |
|----|-------------------------------|---|--------------------------------|
| 12 | 9, 1 mark each line | } | Divide these marks by 2 |
| 8 | two squares, 1 mark each line | | |
| 12 | 3, 1 mark each line | | |
| 12 | 0, 1 mark each line | | |

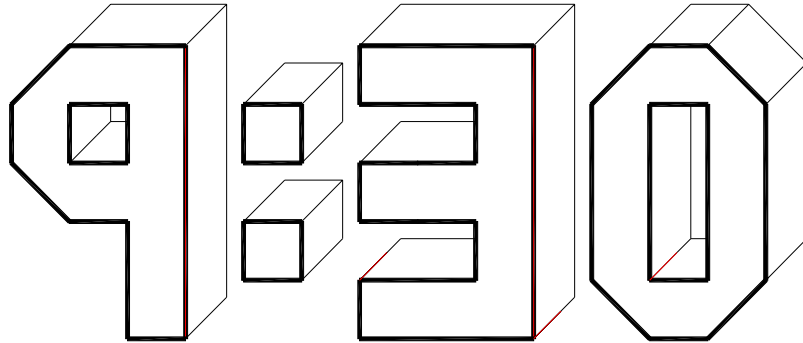
Completion (19)

- | | | | |
|----|-------------------------------|---|--------------------------------|
| 8 | 9, 1 mark each line | } | Divide these marks by 2 |
| 10 | two squares, 1 mark each line | | |
| 9 | 3, 1 mark each line | | |
| 10 | 0, 1 mark each line | | |

Shading/colour (3)

Draughting, accuracy and presentation (12)

Q.4 Oblique Projection



Setting Up (14)

- 9 Outline height, length and width
(deduct 2 each if inaccurate)
- 5 Isometric outline
(deduct 5 if 45° angle is not used)

Front Face 9:30 (22)

- | | | | |
|----|-------------------------------|---|--------------------------------|
| 12 | 9, 1 mark each line | } | Divide these marks by 2 |
| 8 | two squares, 1 mark each line | | |
| 12 | 3, 1 mark each line | | |
| 12 | 0, 1 mark each line | | |

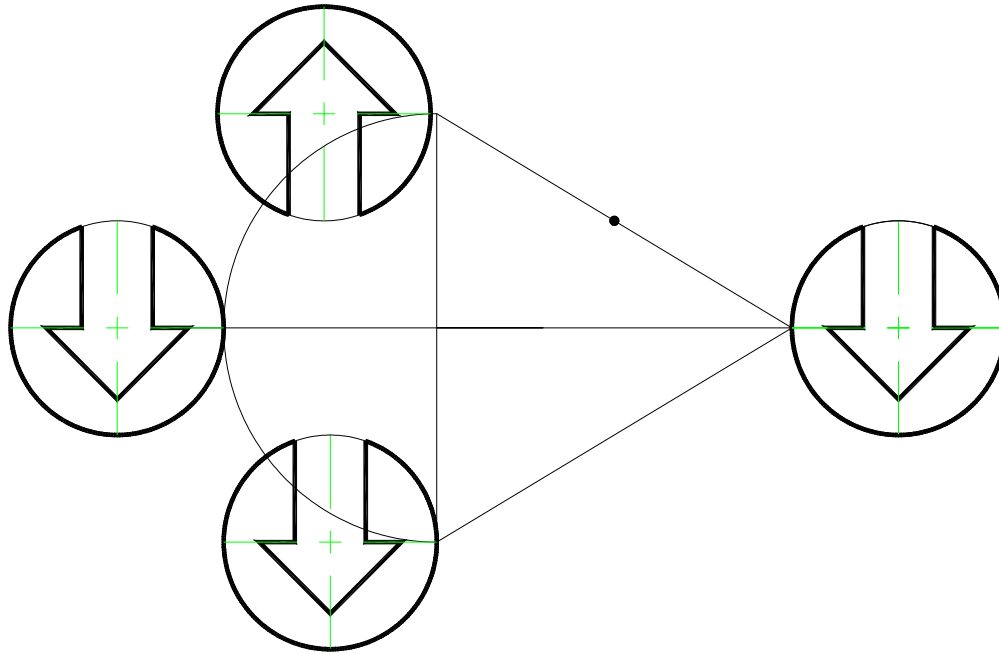
Completion (19)

- | | | | |
|----|-------------------------------|---|--------------------------------|
| 8 | 9, 1 mark each line | } | Divide these marks by 2 |
| 10 | two squares, 1 mark each line | | |
| 9 | 3, 1 mark each line | | |
| 10 | 0, 1 mark each line | | |

Shading/colour (3)

Draughting, accuracy and presentation (12)

Q.5 Transformation Geometry



Setting up (16)

- 6 R60 semi circle 2 marks, horizontal, vertical and sloping lines, 1 mark each
- 10 Fig. F, 1 mark each line, 4 marks circle

Translation (14)

- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

Axial Symmetry (14)

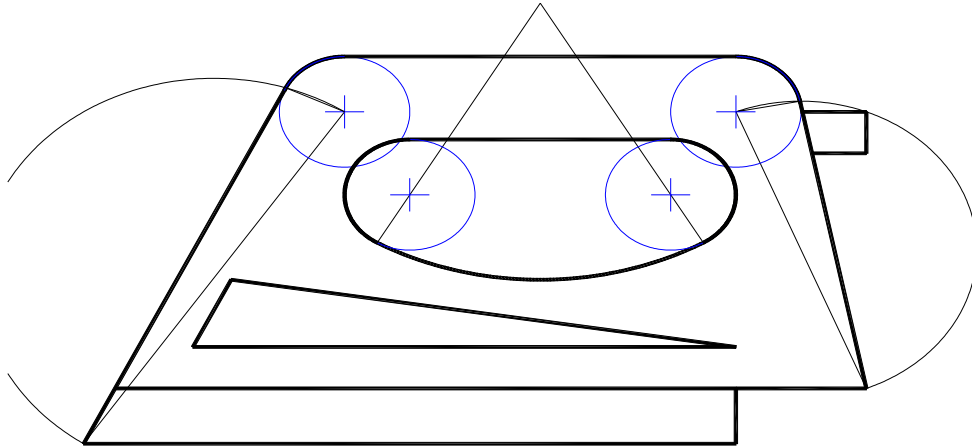
- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

Central Symmetry (14)

- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

Draughting, accuracy and presentation (12)

Q.6 Plane Figures



Setting Up (26)

- 3 Outline 240mm x 140mm
- 3 Base (200mm, 20mm and horizontal line) 3 x 1 each
- 20 4 circles (position and drawing of circles) 4 x 5 each

Tangents (21)

- 14 Tangent lines, 7 each (3 each construction + 4 line)
- 7 Tangent arc R100 (3 construction + 4 arc)

Completion (11)

- 2 Horizontal lines at R20 circles, 1 each
- 3 Lead, 1 mark each line
- 6 Design, 2 marks each line

Draughting, accuracy and presentation (12)