



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate 2011

Marking Scheme

Technical Graphics

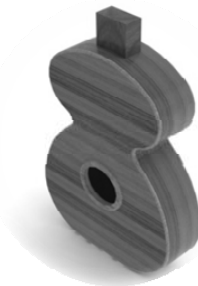
Ordinary Level



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State Examinations Commission

Junior Certificate Examination 2011

Grafaic Theicniúil
Technical Graphics
Ordinary Level



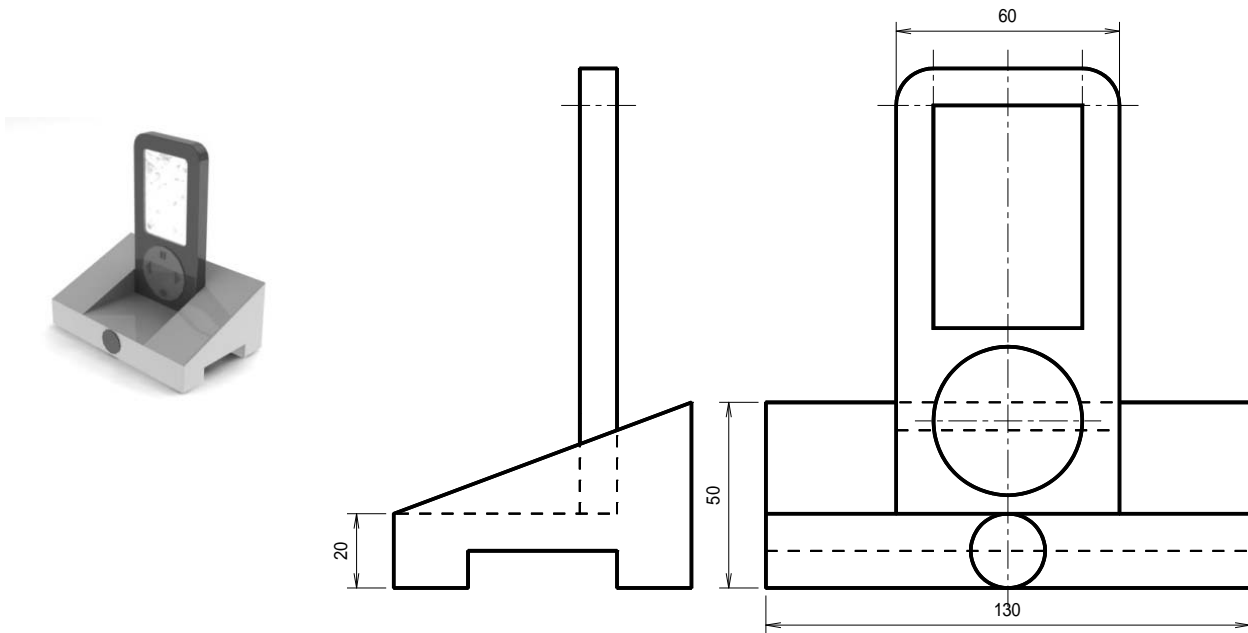
Gnáthleibhéal
Scéim Mharcála

Roinn A agus Roinn B**Section A - Any ten questions from this section**

Q1	4 8	Projection lines from End Elevation (2 × 2 marks) Elevation– 4 lines – 2 marks per line (4 × 2 marks)
Q2	8 4	For a good quality, well proportioned freehand pictorial sketch (5 average quality or rule used) For colour or shading
Q3	6 6	A- Correct Name and Use (3 marks +3 marks) B- Correct Name and Use (3 marks +3 marks)
Q4	4 8	Semi-circle (4 marks) Drawing lines stem and base (4 × 2 marks)
Q5	6 6	Correct location of F1 (6 marks) Arc AOB (6 marks)
Q6	7 5	14 Lines half mark per line (7 marks) For colour or shading (5 marks)
Q7	12	19-21 sq. metres = 12 marks (18 or 22 = 8 marks)
Q8	6 6	A = 2.0m (6 marks) B = 1.2m (6 marks)
Q9	8 4	Elevation of blocks – 4 rows 2 marks for each row correct (-1 mark each row incorrect) Good proportion
Q10	6 6	Line AB (6 marks) Line BC (6 marks)
Q11	6 6	Correct command (6 marks) Correct command (6 marks)
Q12	4 8	1 mark for each projection line to vertical plane 8 marks for correct outline (4 marks for incomplete outline)
Q13	6 6	A = Octagon (6 marks) B = 45 (6 marks)
Q14	12	6 lines – 2 marks per line in perspective view (6 × 2 mark)
Q15	6 6	Correct angle of rotation of handle (6 marks) Complete handle 2 lines and arc (3 × 2 marks)
Total 120		

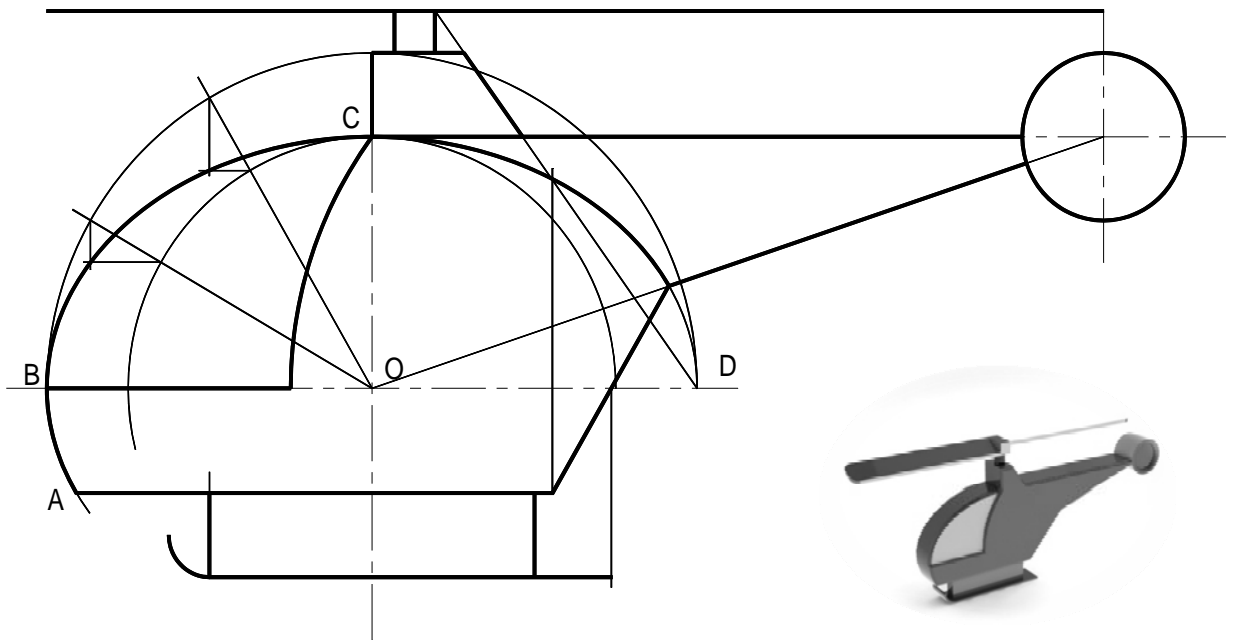
Section B

Ceist 1: Orthographic Projection



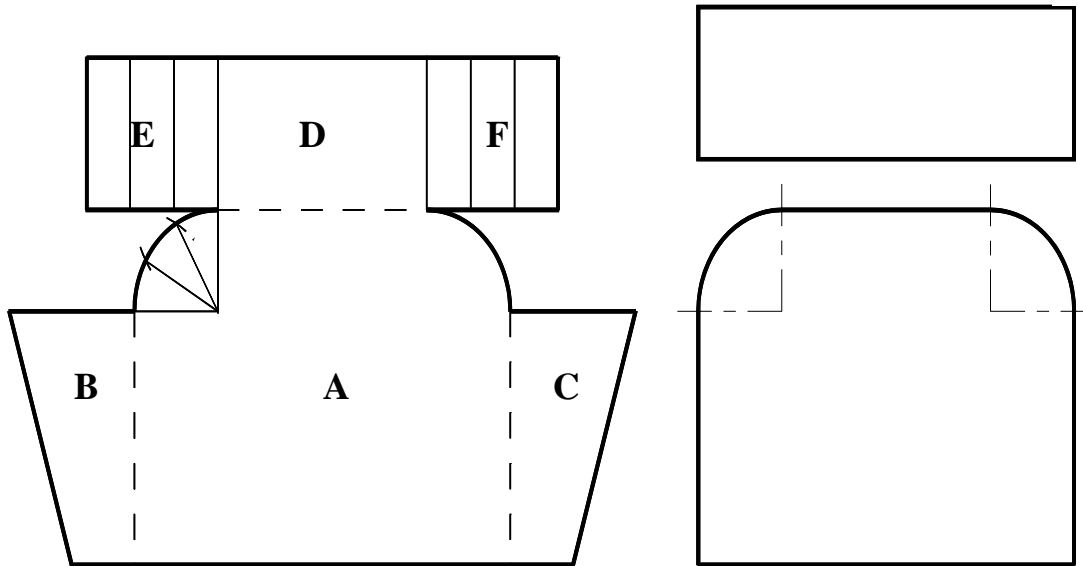
Orthographic Outline (10)	
10	Elevation and end elevation positioned correctly <i>(4 if not aligned or incorrect side, 1 view = 3 marks)</i>
Elevation (25)	
9	Dock Outline 6 lines and circle <i>(6 × 1 mark + 3 marks)</i>
13	MP3 Player outline 3 lines and 2 radii <i>(5 × 1 mark)</i> Screen and circle <i>(4 × 1 mark + 4 marks)</i>
3	Hidden detail <i>(3 × 1 mark)</i>
End Elevation (19)	
10	Dock Outline 7 lines and sloping line <i>(7 × 1 mark + 3 marks)</i>
6	MP3 Player outline <i>(3 × 2 marks)</i>
3	Hidden detail <i>(3 × 1 mark)</i>
Dimension lines (4)	
4	1 mark per dimension line <i>(4 × 1 mark)</i>
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 2: Ellipse



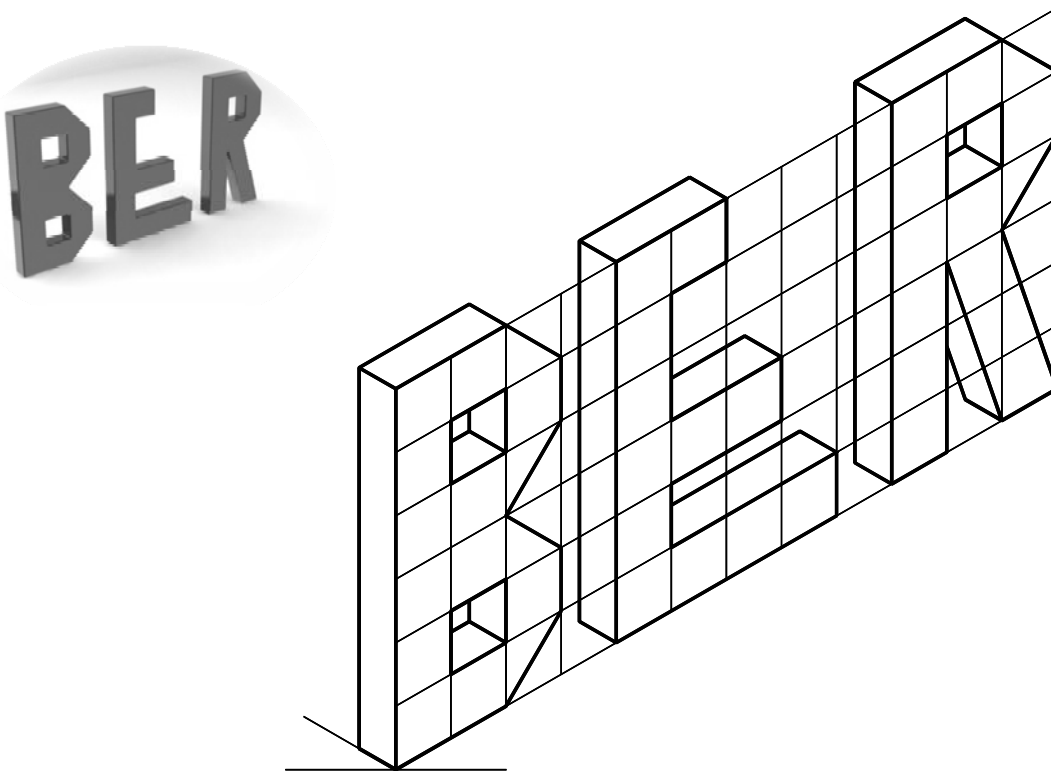
Body Construction (35)	
6	Semi-Ellipse ; Major BD ; Semi- minor OC – (2 × 3 marks)
10	Construction for semi-ellipse (<i>incorrect application = 4 marks</i>)
8	Drawing curve of ellipse ABCD (8,6,4, <i>depending on quality</i>)
5	Arc from D (3marks) horizontal line (2 marks)
6	Base line (3 marks) back angle line (3 marks)
Landing Gear (8)	
8	3 Lines and arc (4 × 2 marks)
Tail (7)	
7	2 Lines and circle (2 × 2 marks + 3 marks)
Top (8)	
3	Sloping line (3 marks)
5	5 lines (5 × 1 mark)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 3: Surface Development



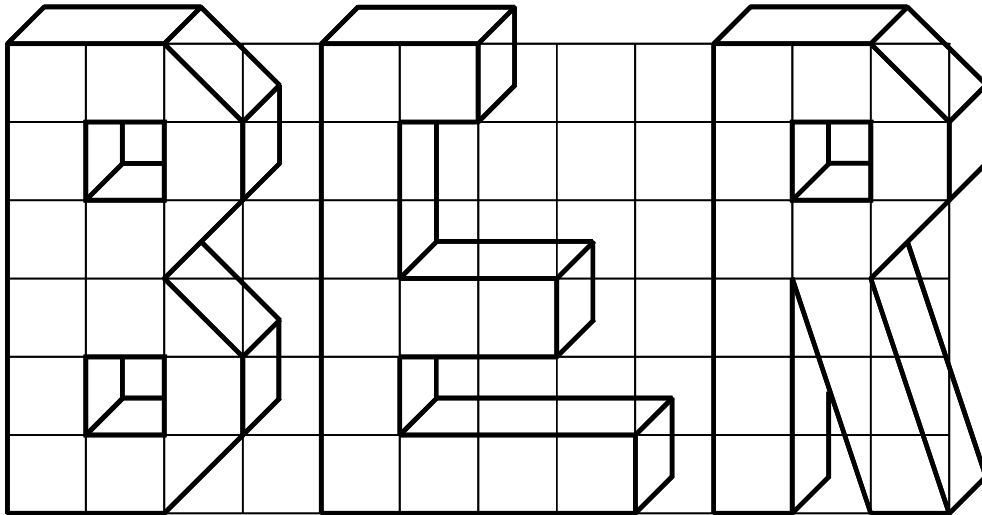
Orthographic (20)	
4	Elevation and plan in correct position <i>(Plan in wrong location 2 marks)</i>
8	Elevation - 4 lines <i>(4 × 2 marks)</i>
8	Plan – 4 lines and 2 radii <i>(4 × 1 marks + 2 × 2 marks)</i>
Development (38)	
8	Base A - 4 lines and 2 radii <i>(4 × 1 mark + 2 × 2 marks)</i>
12	Side B and Side C - 3 lines <i>(3 × 2 marks)</i> - 3 lines <i>(3 × 2 marks)</i>
3	Side D - 3 lines <i>(3 × 1 mark)</i>
6	Construction for finding correct length of sides E and F
6	Side E and Side F - 3 lines <i>(3 × 1 marks)</i> - 3 lines <i>(3 × 1 mark)</i>
3	Fold lines <i>(3 × 1 mark)</i>
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 4: Isometric Projection



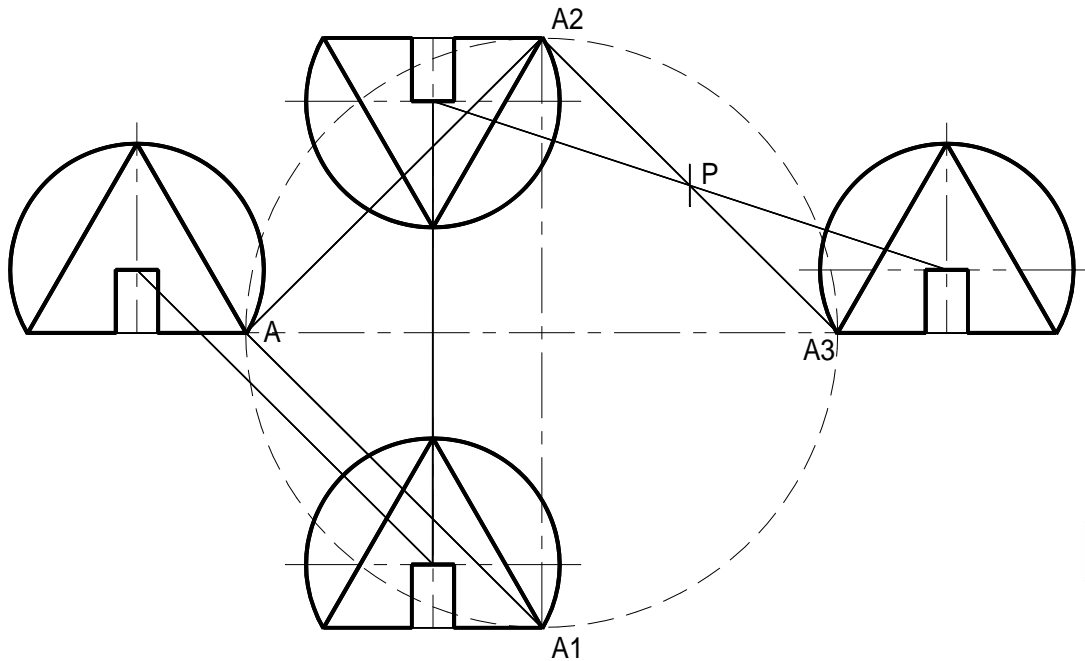
Setting Up (15)	
9	Height, length and width of grid (<i>3 × 3 marks</i>) (<i>deduct 2 marks each if inaccurate</i>)
6	Isometric outline (<i>deduct 3 + 3 marks if 30° angles are not used</i>)
Front Face (22)	
9	Letter B – 17 lines (half mark each line)
6	Letter E – 12 lines (half mark each line)
7	Letter R – 14 lines (half mark each line)
Complete width (21)	7 marks per letter (<i>4 marks per letter if all lines are not included</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 4: Oblique Projection



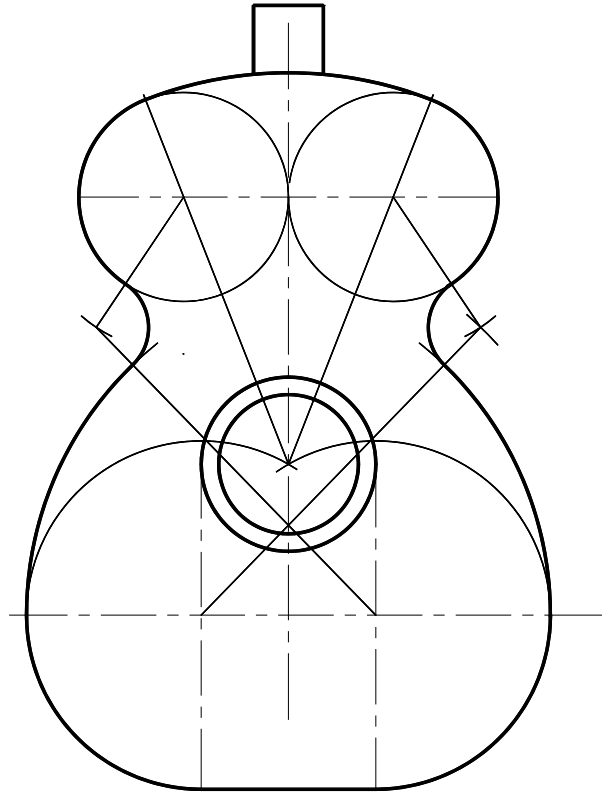
Setting Up (15)	
9	Height, length and width of grid (<i>3 × 3 marks</i>) (<i>deduct 2 marks each if inaccurate</i>)
6	Oblique outline (<i>deduct 6 marks if 45° angle not used</i>)
Front Face (22)	
9	Letter B – 17 lines (half mark each line)
6	Letter E – 12 lines (half mark each line)
7	Letter R – 14 lines (half mark each line)
Complete width (21)	7 marks per letter (<i>4 marks per letter if all lines are not included</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 5 Transformation Geometry



Setting up (16)	
10	Draw given fig ; Circle - 4 marks Triangle - 3 × 1 mark Doorway - 3 × 1 mark
4	Locating points A, A1, A2, A3 (4 × 1 mark)
2	Locating point P
Translation (14)	
4	Drawing 4 lines parallel to A-A1 (correct position and orientation)
10	Drawing fig. as above
Axial Symmetry (14)	
4	Projection lines perpendicular to A-A3
10	Drawing fig. as above
Central Symmetry (14)	
4	Drawing lines through centre point P
10	Drawing Fig. as above
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 6 – Circles and tangents



Outline Construction(17)	
6	Top r 30 circles (<i>2 × 3 marks</i>)
5	Offset 120mm and offset 50mm (<i>3 marks + 2 marks</i>)
6	Base r 50 circles(<i>2 × 3 marks</i>)
Base Completion(34)	
8	Centre location and 2 circles(<i>2 marks + 2 × 3 marks</i>)
10	R100 Arcs and base line (<i>2 × 4 marks + 2 marks</i>)
8	R15Arc - Location (<i>2 marks</i>) POCs (<i>2 × 1 marks</i>) Arc (<i>4marks</i>)
8	R15Arc - Location (<i>2 marks</i>) POCs (<i>2 × 1 marks</i>) Arc (<i>4marks</i>)
Top Completion (7)	
4	Top arc and POCs (<i>2 × 2 marks</i>)
3	3 lines (<i>3 × 1 mark</i>)
(12)	Drafting, accuracy and presentation
Total 70	