



Coimisiún na Scrúduithe Stáit
State Examinations Commission

JUNIOR CERTIFICATE 2009

MARKING SCHEME

TECHNICAL GRAPHICS

ORDINARY LEVEL

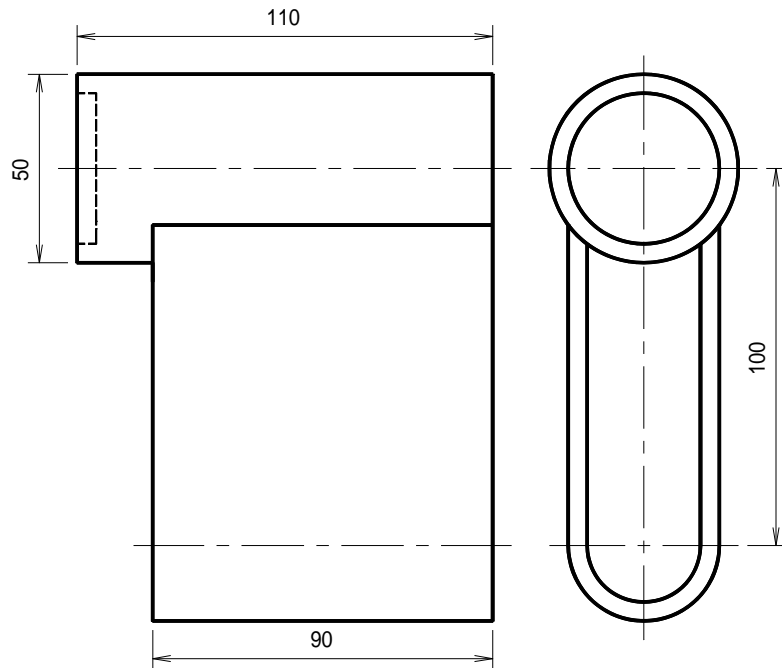
Sections A and B

Section A - Any ten questions from this section

Q1	6 6	End Elevation – 3 lines – 2 marks per line (<i>3x2 marks</i>) Elevation– 2 lines – 3 marks per line (<i>2x3 marks</i>)
Q2	8 4	For a good quality, well proportioned freehand pictorial sketch (<i>4 average quality or rule used</i>) For colour or shading
Q3	6 6	1 Advantage 1 Disadvantage
Q4	6 6	Drawing 2 vertical lines (<i>2x3 marks</i>) Completion of correct rectangle (<i>6 marks</i>)
Q5	6 6	Striking correct arc for F1 (<i>6 marks</i>) Striking correct arc for F2 (<i>6 marks</i>)
Q6	8 4	Completed well proportioned freehand isometric sketch (<i>incorrect size, incorrect proportion, 4 marks</i>) For colour or shading
Q7	12	60-62 sq. metres = 12 marks (<i>59 or 63 = 8 marks</i>)
Q8	6 6	A = 900mm B = 700mm
Q9	8 4	Elevation of blocks – 4 rows 2 marks for each row correct (<i>-1 mark each row incorrect</i>) Good proportion
Q10	6 6	Body, 3 lines (<i>3x2 marks</i>) Handle, 3 lines (<i>3x2 marks</i>)
Q11	6 6	Mirror command Rotate command
Q12	6 6	1 mark for each projection line of cooker to vertical plane 6 marks for correct outline (<i>4 marks for incomplete outline</i>)
Q13	6 6	Correct location between C and M (<i>3 marks for line, 3 marks for POC</i>) Correct location between L and M (<i>3 marks for construction, 3 marks for POC</i>)
Q14	12	4 lines – 3 marks per line in perspective view (<i>4 x 3 marks</i>)
Q15	8 4	Correct angle of rotation of needle Complete needle (<i>2 marks per line</i>)
Total 120		

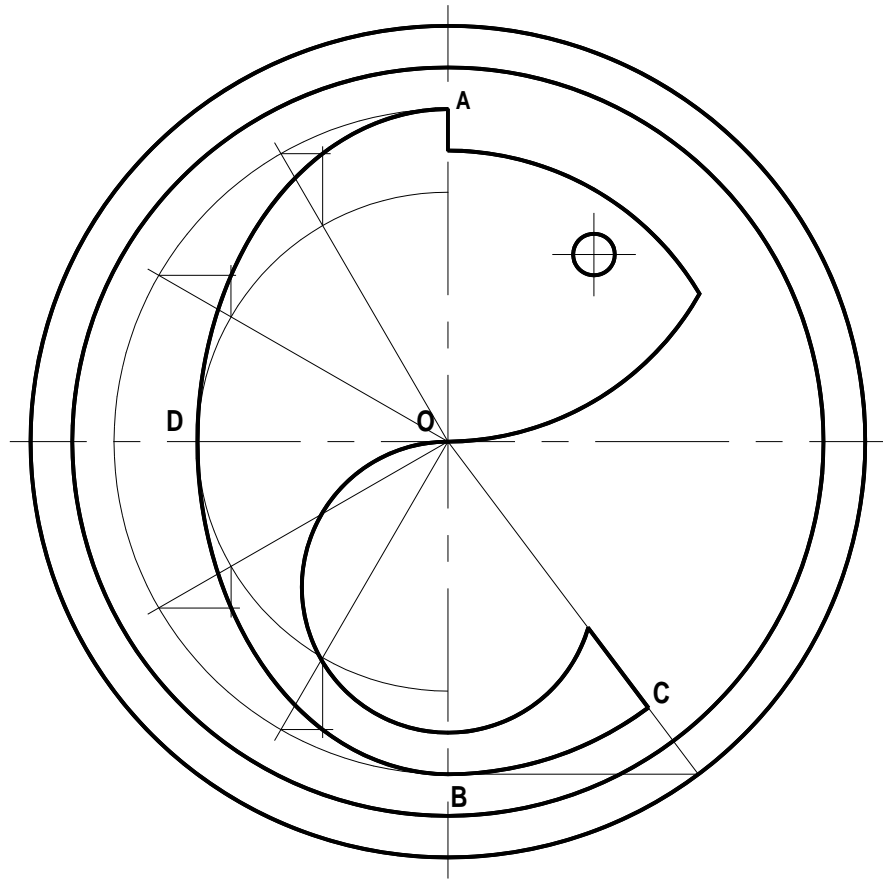
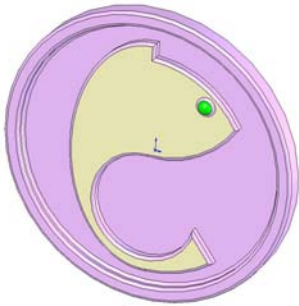
Section B

Ceist 1: Orthographic Projection



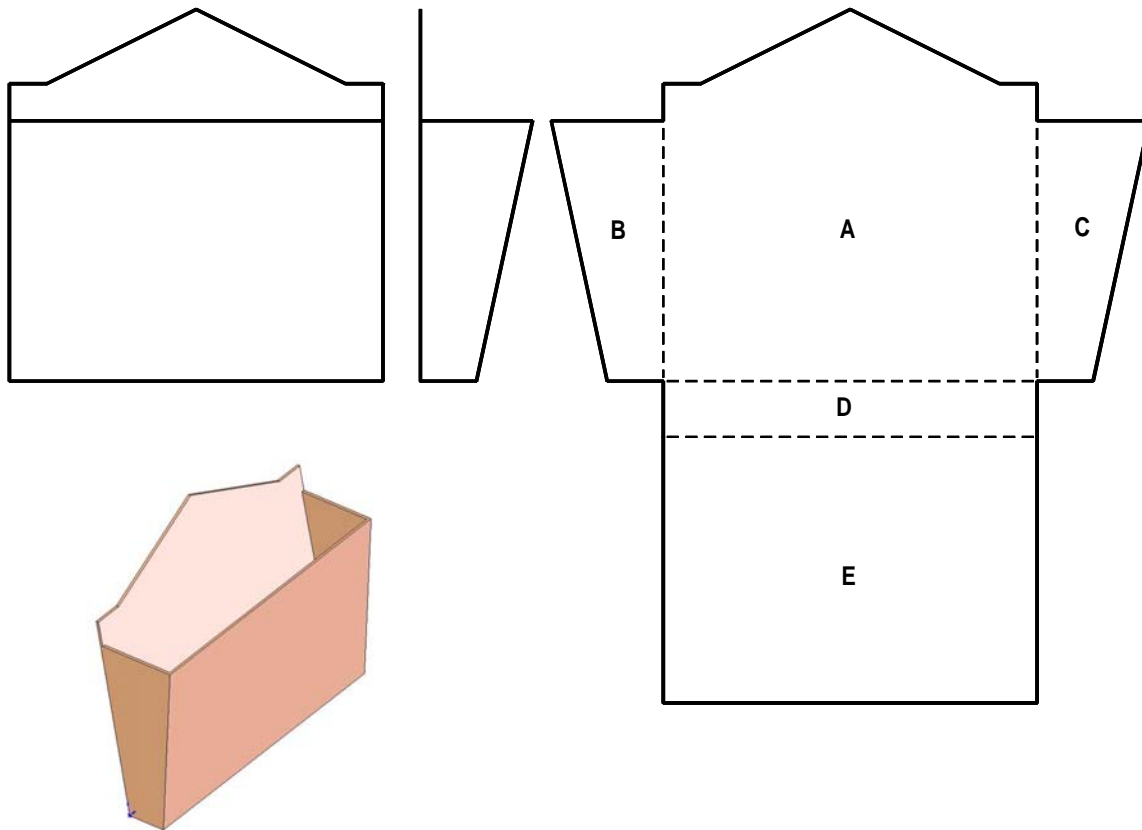
Orthographic Outline (10)	
10	Elevation and end elevation positioned correctly <i>(4 if not aligned or incorrect side, 1 view = 3 marks)</i>
Elevation (20)	
9	Handle outline 2 horizontal lines (<i>2x2marks</i>) vertical line r-side (<i>2marks</i>) vertical line l-side (<i>3marks</i>)
8	Body outline 4 lines (<i>4x2 marks</i>)
3	Hidden detail lines (<i>3x1mark</i>)
End Elevation (24)	
6	Top circles (<i>2x3 marks</i>)
6	Semi-circles (<i>2x3 marks</i>)
12	Vertical lines (<i>4x3 marks</i>)
Dimension lines (4)	
4	1 mark per dimension line (<i>4x1 mark</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 2: Ellipse



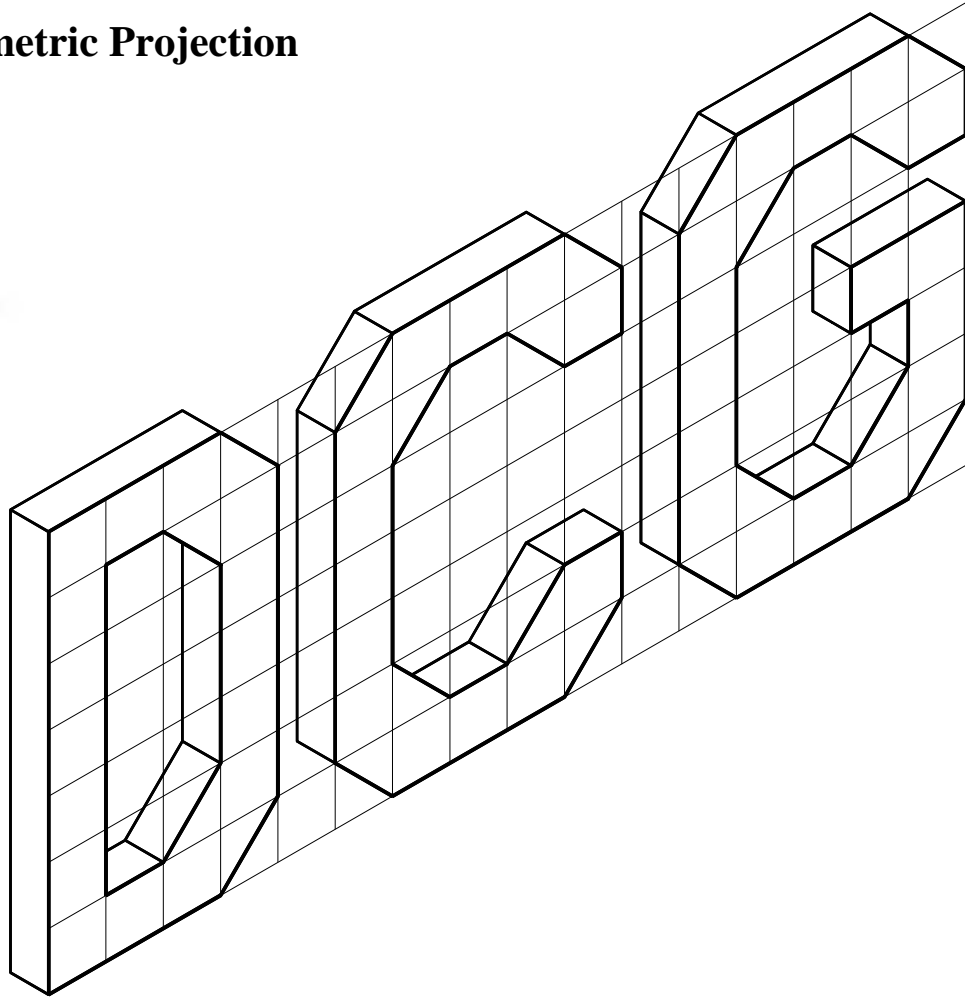
Circles (12)	
12	Large circles (<i>2x6 marks</i>)
Fish body (37)	
6	Semi-Ellipse ; Major AB ; Semi- minor OD – (<i>2x3 marks</i>)
10	Construction for semi-ellipse (<i>incorrect application = 4 marks</i>)
8	Drawing curve of ellipse (<i>8,6,4, depending on quality</i>)
4	Circle R 35 (<i>4 marks</i>)
6	Arc BC 6 marks (<i>-1 inaccurate position of centre</i>)
3	Line OC (<i>3 marks</i>)
Head (9)	
6	R70 arcs (<i>2x3 marks</i>)
3	Eye (<i>3 marks</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 3: Surface Development



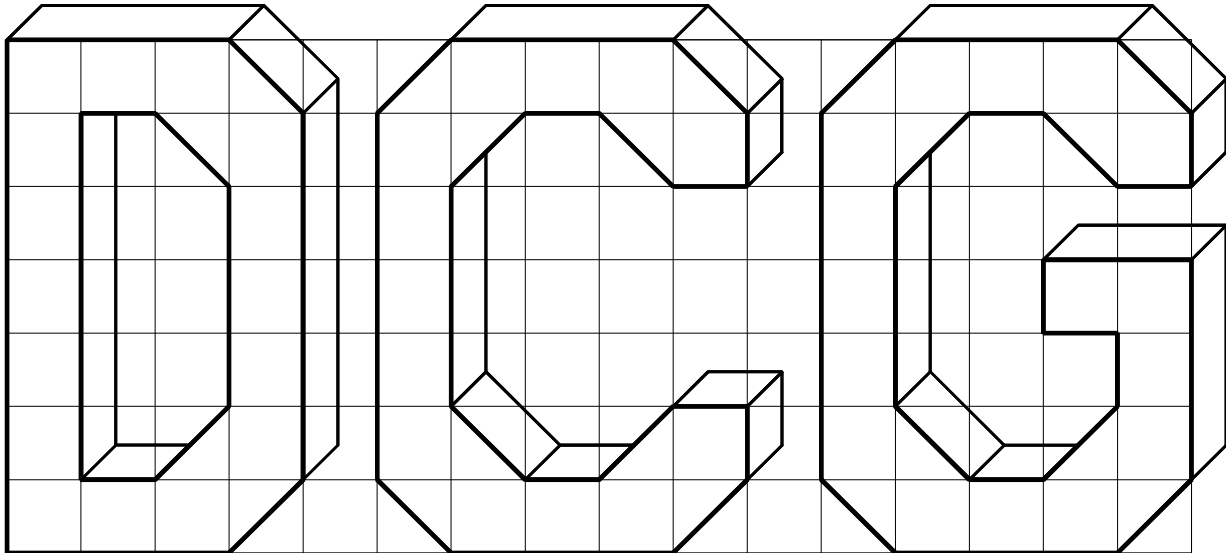
Orthographic (20)	
4	Elevation and end elevation in correct position <i>(End view wrong side or wrong location 2 marks)</i>
10	Elevation 8 lines <i>(6x1 mark + 2x2 marks for sloping lines)</i>
6	End elevation 4 lines <i>(3x1 mark + 3 for sloping line)</i>
Development (38)	
9	Back A - 7 lines <i>(5x1 mark + 2x2 marks for sloping lines)</i>
6	Side B - 3 lines <i>(3x2 marks)</i>
6	Side C - 3 lines <i>(3x2 marks)</i>
6	Base D - 3 lines <i>(3x2 mark)</i>
7	Front E - 3 lines <i>(2 vertical lines 2x3 marks + 1 for horizontal line)</i>
4	Broken lines to indicate fold lines <i>(4x1 mark)</i>
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 4: Isometric Projection



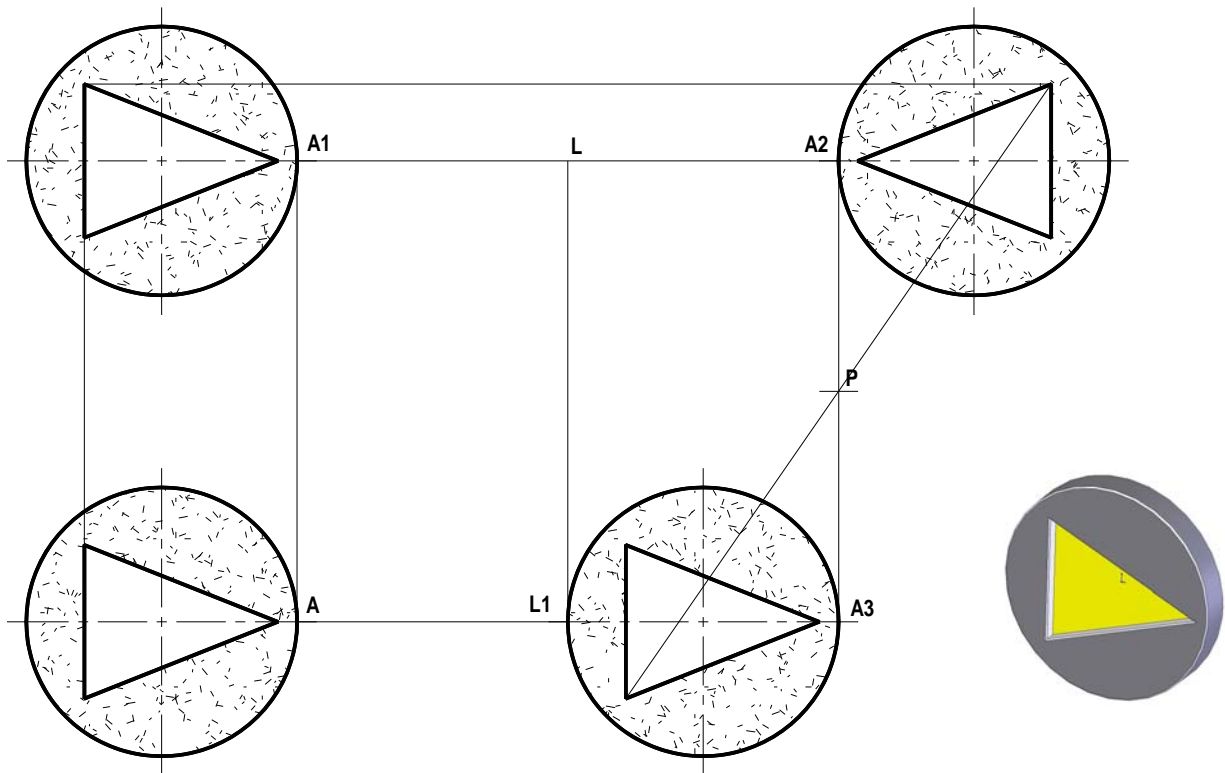
Setting Up (14)	
9	Height, length and width of grid (3x3 marks) (deduct 2 each if inaccurate)
5	Isometric outline (deduct 2 + 3 if 30° angles are not used)
Front Face (26)	
6	Letter D – 12 lines (half mark each line)
9	Letter C – 18 lines (half mark each line)
11	Letter G – 21 lines (half mark each line)
Complete width (18)	6 marks per letter (<i>3 marks per letter if all lines are not put in</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 4: Oblique Projection



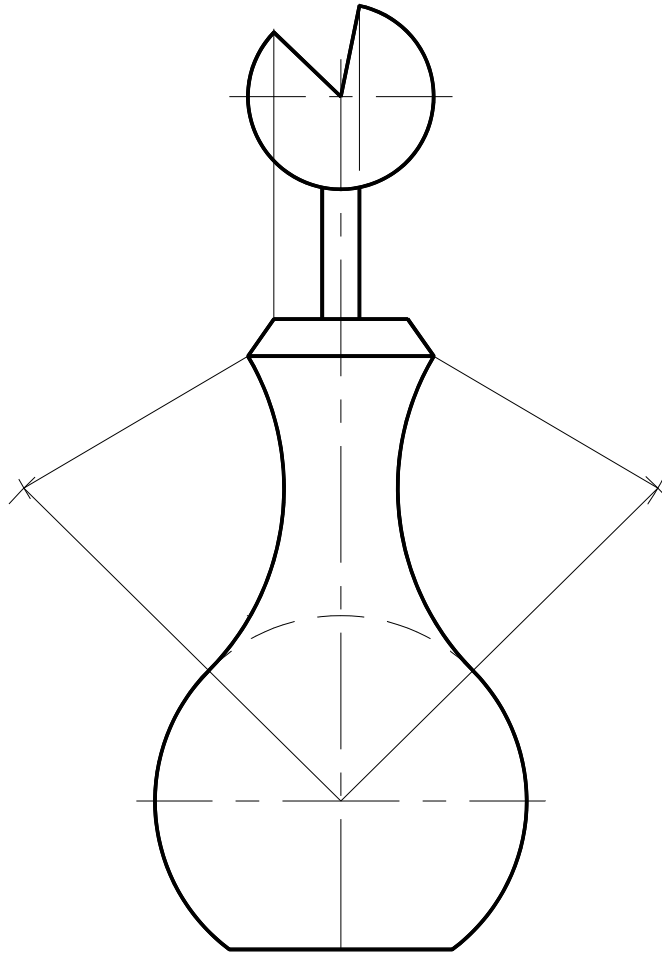
Setting Up (14)	
9	Height, length and width of grid (<i>3x3 marks</i>) <i>(deduct 2 each if inaccurate)</i>
5	Oblique outline (<i>deduct 5 marks if 45° angle not used</i>)
Front Face (26)	
6	Letter D – 12 lines (half mark each line)
9	Letter C – 18 lines (half mark each line)
11	Letter G – 21 lines (half mark each line)
Complete width (18)	6 marks per letter (<i>3 marks per letter if all lines are not put in</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 5 Transformation Geometry



Setting up (16)	
10	Draw given fig ; - Circle 2 marks - vertical line 2 marks 2 sloping lines 2x3 marks
4	Locating points A1, A2, A3 and L-L1 (4 x 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 L-L1
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



Vase Outline (37)	
7	R50 circle and base line (<i>5marks + 2 marks</i>)
6	Heights 45 and 130 (<i>2x3 marks</i>)
8	4 top lines (<i>4x2 marks</i>)
8	R70 arc – Striking 2 arcs (<i>2x1 mark</i>) point of contact (<i>1 mark</i>) Drawing arc (<i>5 marks</i>)
8	R70 arc – Striking 2 arcs (<i>2x1 mark</i>) point of contact (<i>1 mark</i>) Drawing arc (<i>5 marks</i>)
Rose (21)	
7	Height 60 and R25 (<i>3 marks + 4 marks</i>)
6	Stem, 2 lines (<i>2x3 marks</i>)
8	Cutout, 2 offsets and 2 lines (<i>2x2 marks + 2x2 marks</i>)
(12)	Drafting, accuracy and presentation
Total 70	