JUNIOR CERTIFICATE 2010

MARKING SCHEME

TECHNICAL GRAPHICS

ORDINARY LEVEL

Sections A and B

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination 2010

Grafaic Theicniúil
Technical Graphics – Ordinary Level

## *Gnáthleibhéal*
Scéim Mharcála

Roinn A agus B

Section A - *Any ten questions from this section*

|		
Q1	*3* *9*	Projection line from End Elevation **(3 marks)** Elevation– 3 lines – 3 marks per line **(3x3 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*	Correct Name 1 Use
Q4	*6* *6*	Bisection of line AB **(6 marks)** Drawing line from C **(6 marks)**
Q5	*3* *5* *4*	Location of Point N **(3 marks)** Correct construction for tangent **(5 marks)** Drawing tangent lines LM and LN **(2+2 marks)**
Q6	*12*	36-38 sq. metres = 12 marks **(35 or 39 = 8 marks)**
Q7	*8* *4*	Elevation of blocks – 4 rows 2 marks for each row correct **(-1 mark each row incorrect)** Good proportion
Q8	*6* *6*	A = 700mm **(reversed and correct 3 marks each)** B = 500mm
Q9	*7* *5*	7 Lines **(7x1 mark)** For colour or shading
Q10	*6* *6*	Fillet command **(6 marks)** Circle command **(6 marks)**
Q11	*6* *6*	Correct location of 2 corners **(2x3 marks)** Drawing 3 lines to complete Hexagon **(3x2 marks)**
Q12	*6* *6*	1 mark for each projection line of letter H to vertical plane 6 marks for correct outline **(4 marks for incomplete outline)**
Q13	*6* *6*	Drawing 2 Diagonal lines **(2x3 marks)** Outline 2 lines to centre **(2x3 marks)**
Q14	*12*	6 lines – 2 marks per line in perspective view **(6x2 marks)**
Q15	*8* *4*	Correct angle of rotation of needle Complete needle **(2 marks per line)**
Total 120		

Section B

Ceist 1: Orthographic Projection
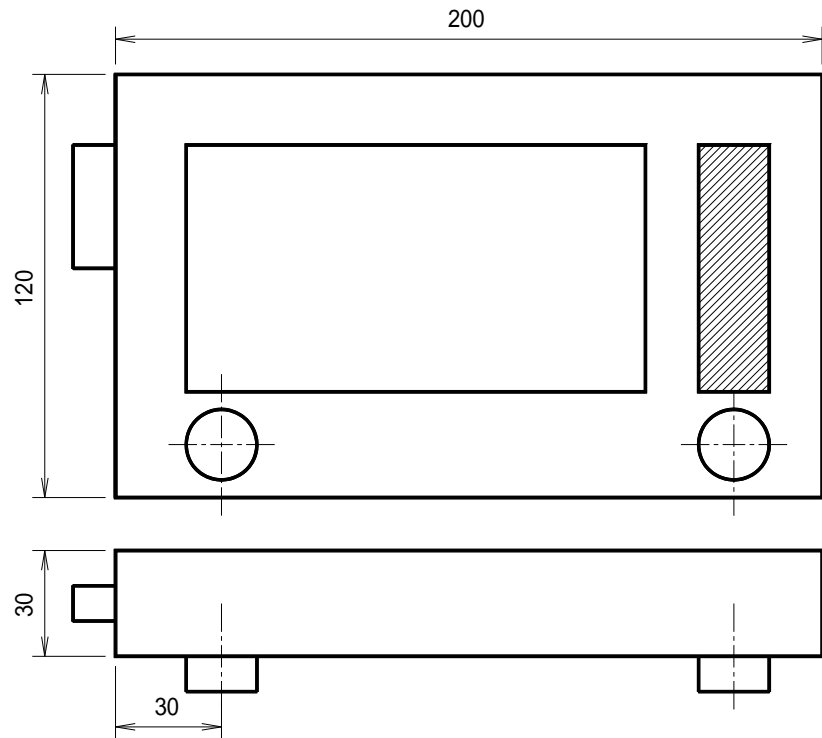
Orthographic Outline (10)	
10	Elevation and Plan positioned correctly *(4 marks if incorrect position of plan, 1 view = 3 marks)*
Elevation (27)	
8	Player Outline *(4×2marks)*
8	2 Rectangles on Front *(4×1mark +4×1mark)*
8	2Circular Buttons *(2×4 marks, incorrect position -2 each)*
3	Button on side *(3×1mark)*
Plan (17)	
8	Player Outline *(4×2 marks)*
9	3 Buttons *(3×3 marks)*
Dimension lines (4)	
4	1 mark per dimension line *(4×1 mark)*
(12)	**Drafting, accuracy and presentation**
Total 70	

Ceist 2: Ellipse
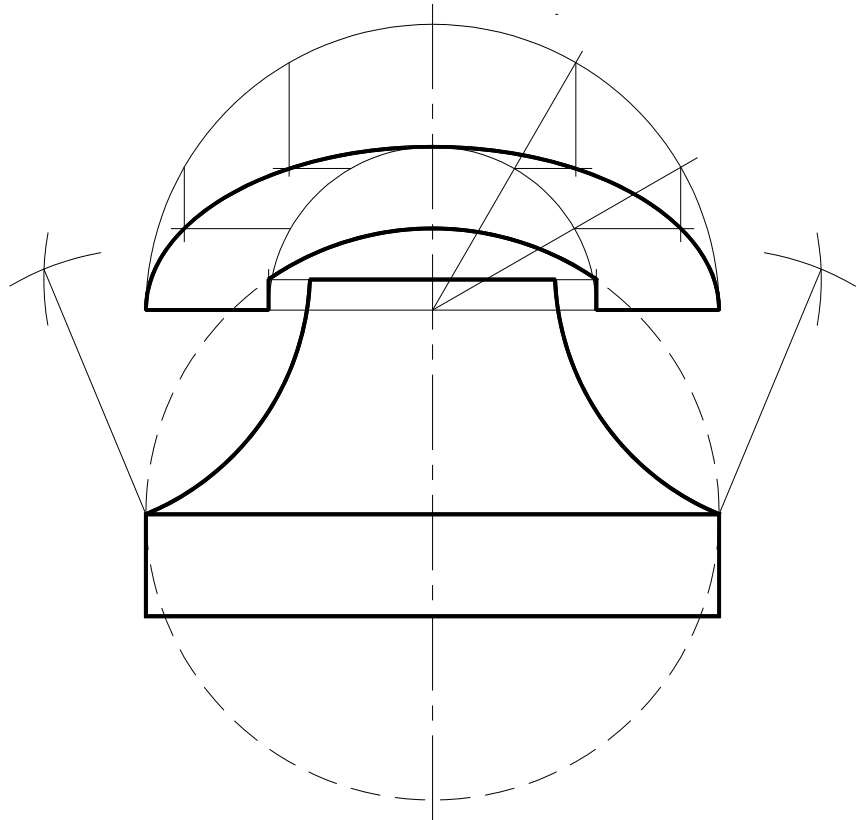
Base (25)	
3	R 70 Circle
8	Base Rectangle *(4×2 marks)*
2	Offset 50
4	Top Line *(position2 marks + 2 marks for line)*
4	R 65 Arc *(location of centre 2 marks + 2marks for arc)*
4	R 65 Arc *(location of centre 2 marks + 2marks for arc)*
Hand piece (33)	
6	**Semi-Ellipse**; Major **LM**; Semi- minor **OM** – *(2x3 marks)*
10	Construction for semi-ellipse *(incorrect application = 4 marks)*
8	Drawing curve of ellipse *(8,6,4, depending on quality)*
9	4 Lines and Arc *(4×2 marks + arc 1 mark)*
(12)	**Drafting, accuracy and presentation**
Total 70	

# Ceist 3: Surface Development
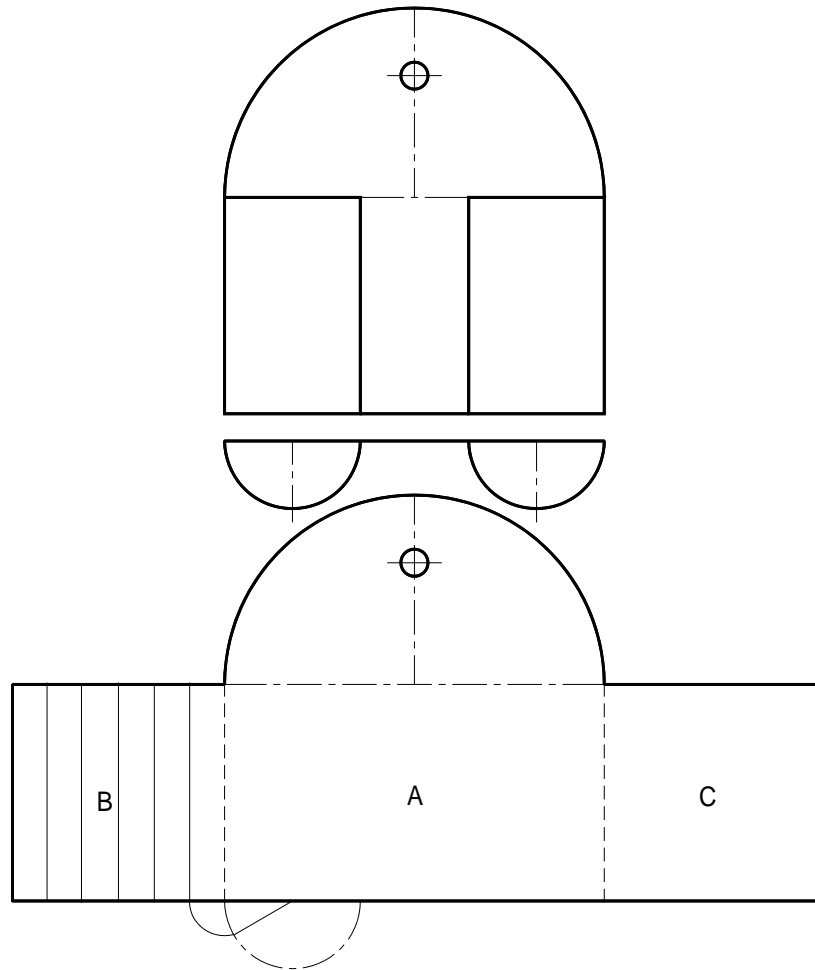
Orthographic (21)	
4	Elevation and Plan in correct position *(Plan in wrong location 2 marks)*
11	Elevation - 7 lines *(7×1 mark)* Semi-circle *(2marks)* Small circle *(2marks)*
6	Plan - line and 2 semi-circles *(3×2 marks)*
Development (37)	
13	Back **A** - 3 lines *(3×3marks)* Semi- circle and hole *(2marks + 2 marks)*
6	Construction for finding correct length of sides B and C
8	Side **B** - 3 lines *(3×2 marks + 2 for correct length)*
8	Side **C** - 3 lines *(3×2 marks + 2 for correct length)*
2	Broken lines to indicate fold lines *(2×1 mark)*
(12)	**Drafting, accuracy and presentation**
Total 70	

Ceist 4: Isometric Projection

Setting Up (14)	
9	Height, length and width of grid (*3×3 marks*) (*deduct 2marks each if inaccurate*)
5	Isometric outline (*deduct 2 + 3 if 30° angles are not used*)
Front Face (23)	
8	Letter **E** – 16 lines (half mark each line)
7	Letter **P** – 13 lines (half mark each line)
8	Letter **A** – 16 lines (half mark each line)
Complete width (21)	7 marks per letter (*4 marks per letter if all lines are not put in*)
(12)	**Drafting, accuracy and presentation**
Total 70	

Ceist 4: Oblique Projection
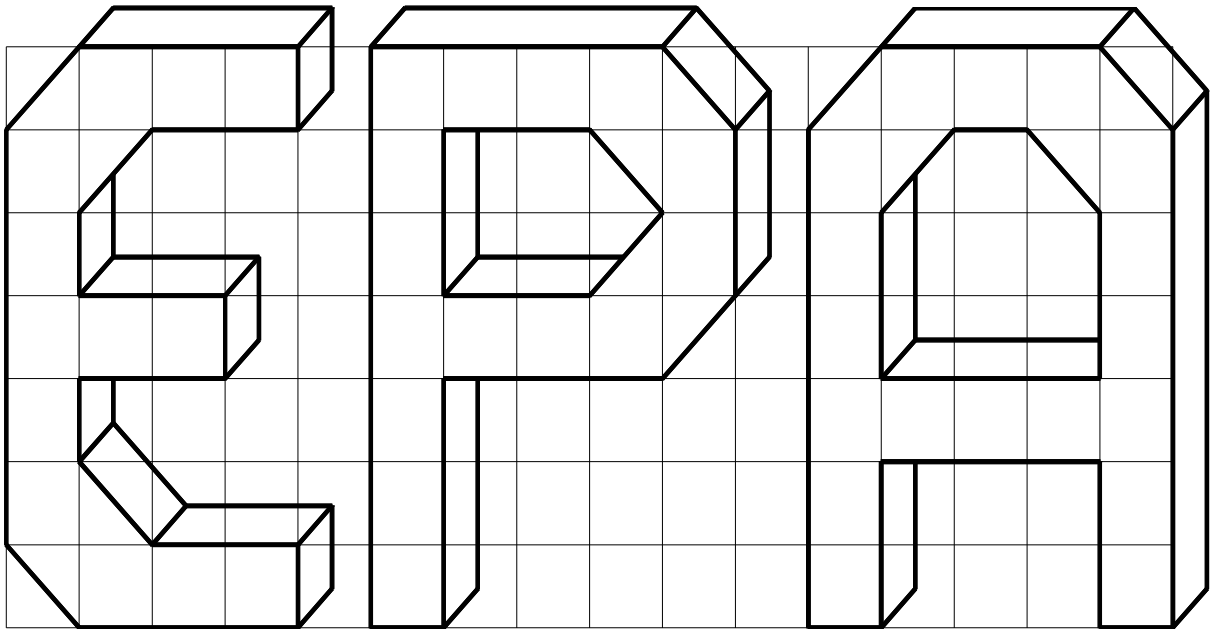
Setting Up **(14)**	
9	Height, length and width of grid *(3×3 marks)* *(deduct 2 each if inaccurate)*
5	Oblique outline *(deduct 5 marks if 45° angle not used)*
Front Face (23)	
8	Letter **E** – 16 lines (half mark each line)
7	Letter **P** – 13 lines (half mark each line)
8	Letter **A** – 16 lines (half mark each line)
Complete width (21)	7 marks per letter *(4 marks per letter if all lines are not put in)*
(12)	**Drafting, accuracy and presentation**
Total 70	

Ceist 5   Transformation Geometry
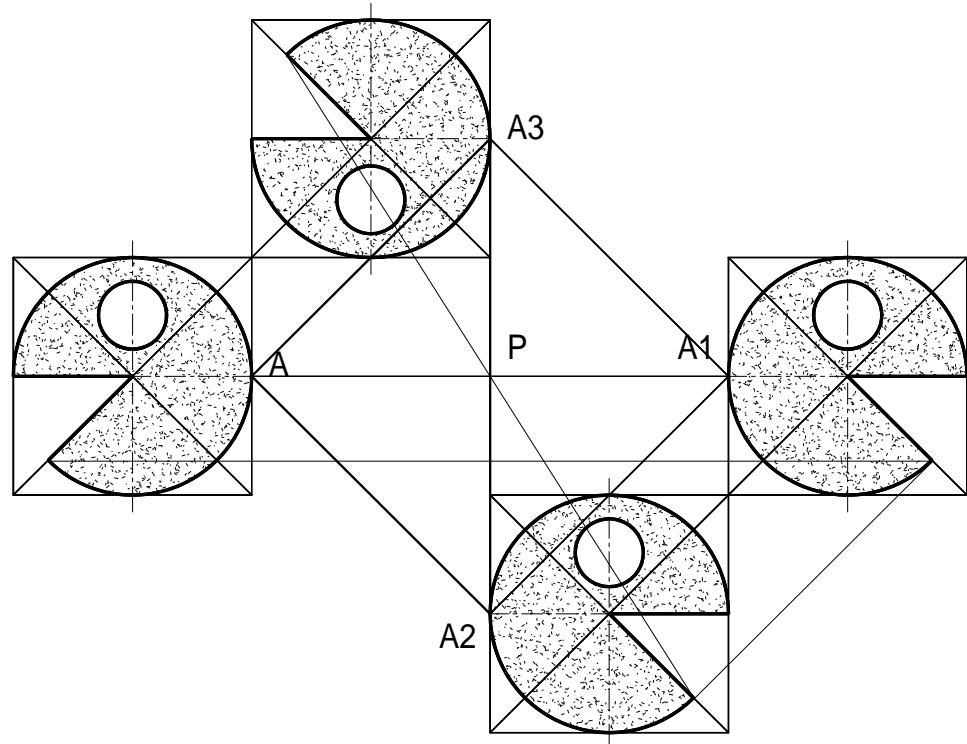
Setting up (16)	
10	**Draw given fig ;** Circle **- 4 marks** - Cut Out - **2+2 marks** Small Circle - **2 marks**
4	Locating points A1, A2, A3 and line A2-A3 (**4 ×1 mark**)
2	Locating point **P**
Axial Symmetry (14)	
4	Projection lines perpendicular to A2-A3 (**correct position and orientation**)
10	Drawing fig. as above
Translation (14)	
4	Projection lines parallel to A1-A2
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
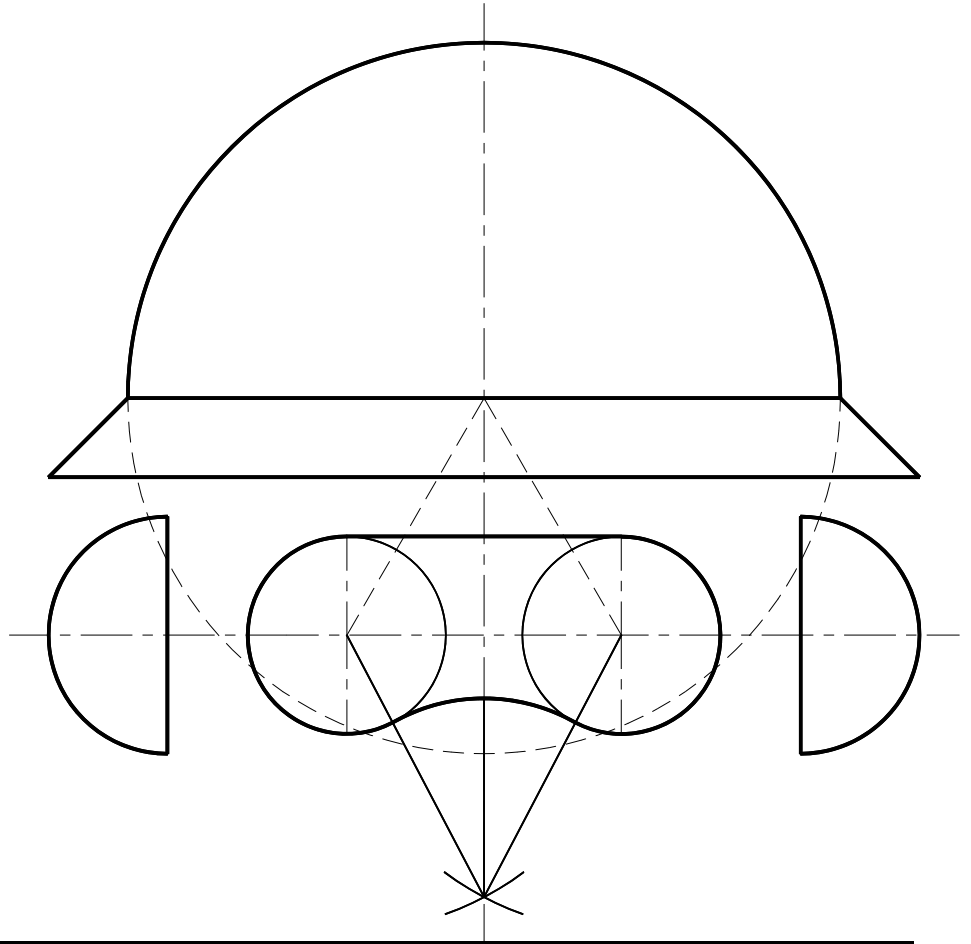
Hat (18)	
6	Semi-circle *(6marks)*
12	2 Horizontal Lines*(2×2 marks)* 2 Sloping Lines *(2×4 marks)*
Goggles (30)	
4	Offset 40mm *(4 marks)*
6	Location of circles – angle 60 *(2×3 marks)*
9	R25 Circles and line *(2×3 marks + 3marks)*
11	R50 Arc - Location Arc *(3 marks)* POCs *(2×2 marks)* Arc*(4 marks)*
Ear Muffs (10)	
5	L. Side – Semi-circle and line *(4marks +1mark)*
5	R. Side – Semi-circle and line *(4marks +1mark)*
(12)	**Drafting, accuracy and presentation**
Total 70	