



Coimisiún na Scrúduithe Stáit
State Examinations Commission

JUNIOR CERTIFICATE 2008

MARKING SCHEME

TECHNICAL GRAPHICS

ORDINARY LEVEL

Sections A and B

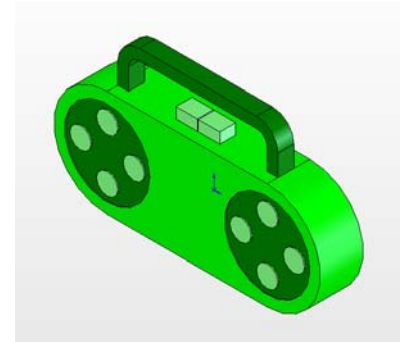
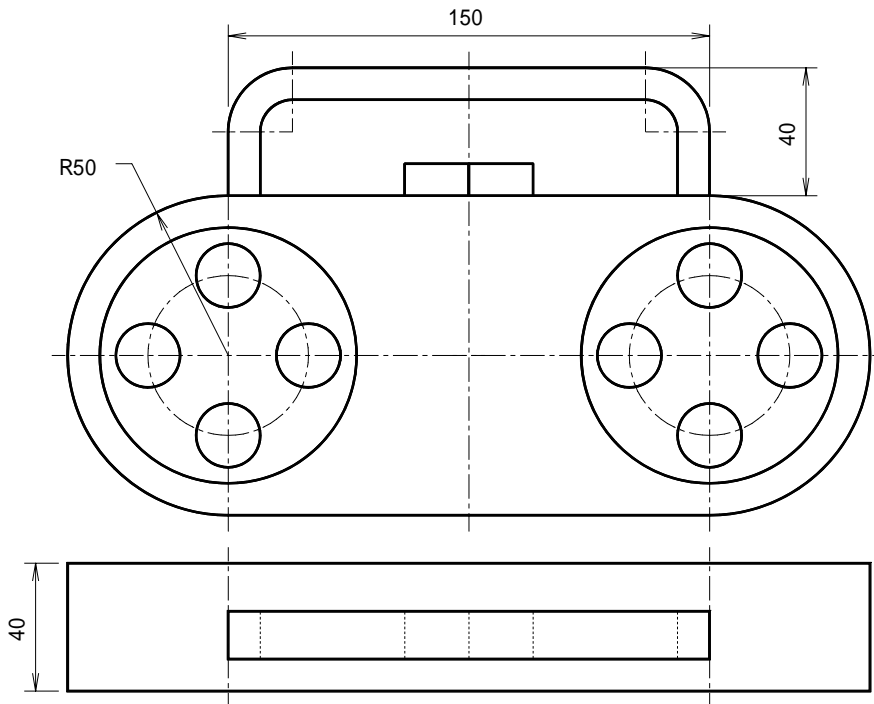
Section A - any *ten* questions from this Section

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

Q1	12	End Elevation – 4 lines – 3 marks per line (4x3 marks)
Q2	9 3	For a good quality freehand pictorial sketch (<i>poorer quality or where rule used: 5 marks</i>) Colour or shading
Q3	6 6	USB or memory stick or flash drive Storage or retrieval of computer data
Q4	6 6	Double vertical height of rectangle Correct triangle
Q5	6 3 3	Bisection of angle Draw tangent Complete other side
Q6	9 3	Well proportioned freehand isometric sketch (<i>inaccurate or where rule used: 5 marks</i>) For colour or shading
Q7	8 4	Elevation of blocks 2 marks for each row correct (<i>-1 mark each row inaccurate</i>) Good proportion
Q8	6 6	A = 3.5 metre (3.4 or 3.6 = 4 marks) B = 3 metre (2.9 or 3.1 = 4 marks)
Q9	12	32 sq. metres = 12 marks (31 or 33 = 8 marks)
Q10	3 3 6	lines at right angles to X1-Y1: 3 marks (1 mark per line) correct height: 3 marks lines to complete: 1 mark per line
Q11	12	Correct octagon (<i>incomplete 9 marks</i>) (<i>Irregular octagon 6 marks</i>)
Q12	6 6	each projection line of doorway to vertical plane: 1 mark correct outline : 6 marks , 3 marks for incomplete outline
Q13	12	Drawing centre lines (<i>points marked without centre lines 4 marks</i>)
Q14	12	3 lines – 4 marks per line in perspective (3 x 4 marks)
Q15	5 7	Correct angle of rotation of <i>Minute Hand</i> Complete hand - point 2 marks per line in triangle plus 1 mark for arm
Total 120		

Section B – 2008

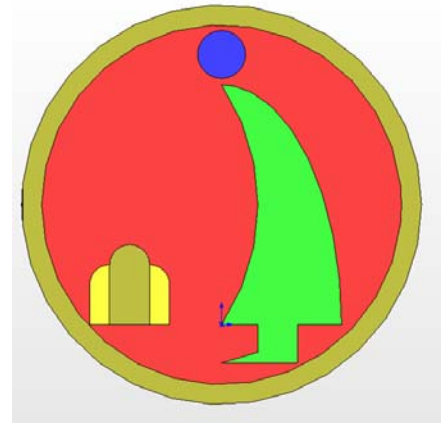
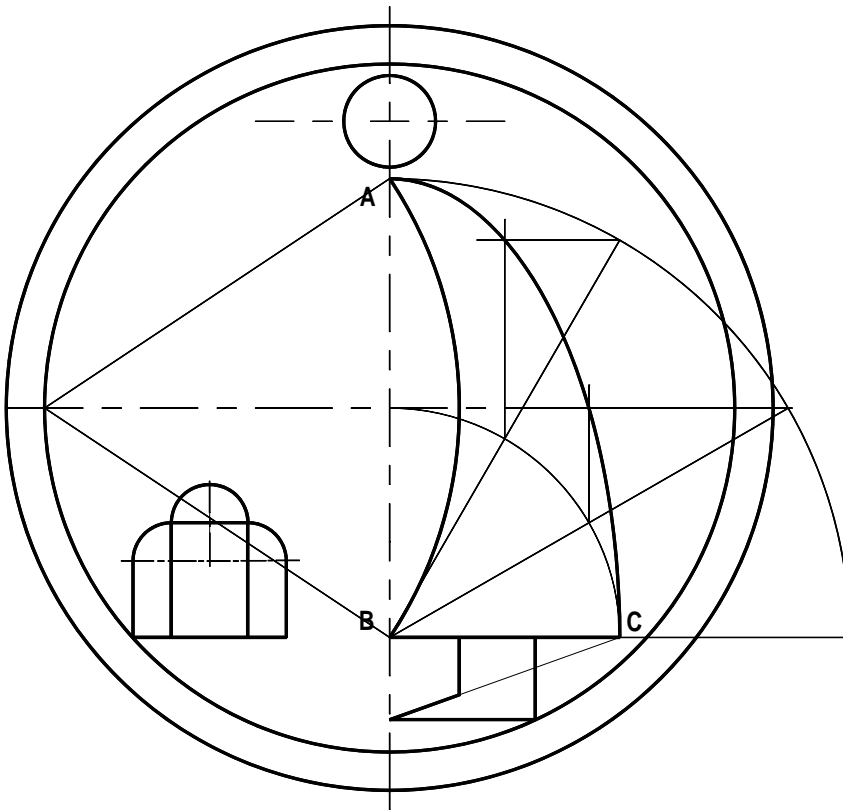
Ceist 1: Orthographic Projection



Note: inaccurate measurements: -1 mark in Section B

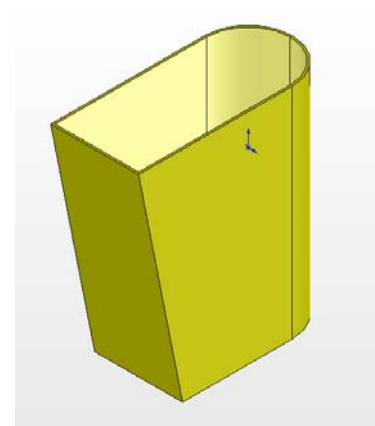
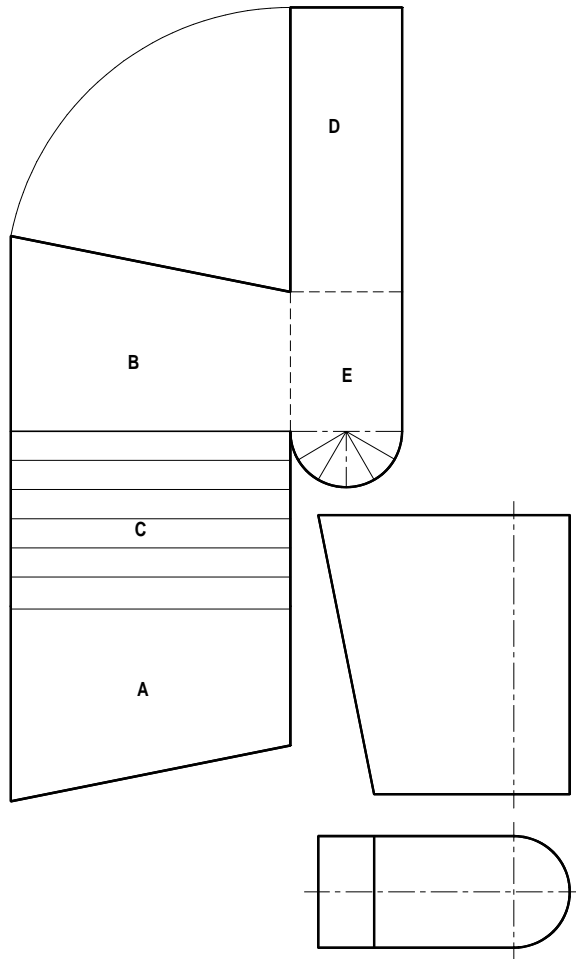
Orthographic Outline (10)	
10	Plan and elevation positioned correctly (-4 not aligned) 1 view = 3marks
Elevation (30)	
6	Body outline 2 lines (2x1mark) R50 semi-circles (2x2 marks)
10	8 Small circles (8x1 marks) 2 r40 circles (2x1 mark)
10	Handle: 6 lines + 4 arcs (10x1 mark)
4	Buttons: 4 lines (4x1 mark)
Plan (14)	
4	Outline: 4 lines (4x1 mark)
6	Handle outline 4 lines (4x1 mark + 2 for position)
4	Hidden detail: 4 lines (4x1 mark)
Dimension lines (4)	
4	1 mark per dimension line
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 2: Ellipse



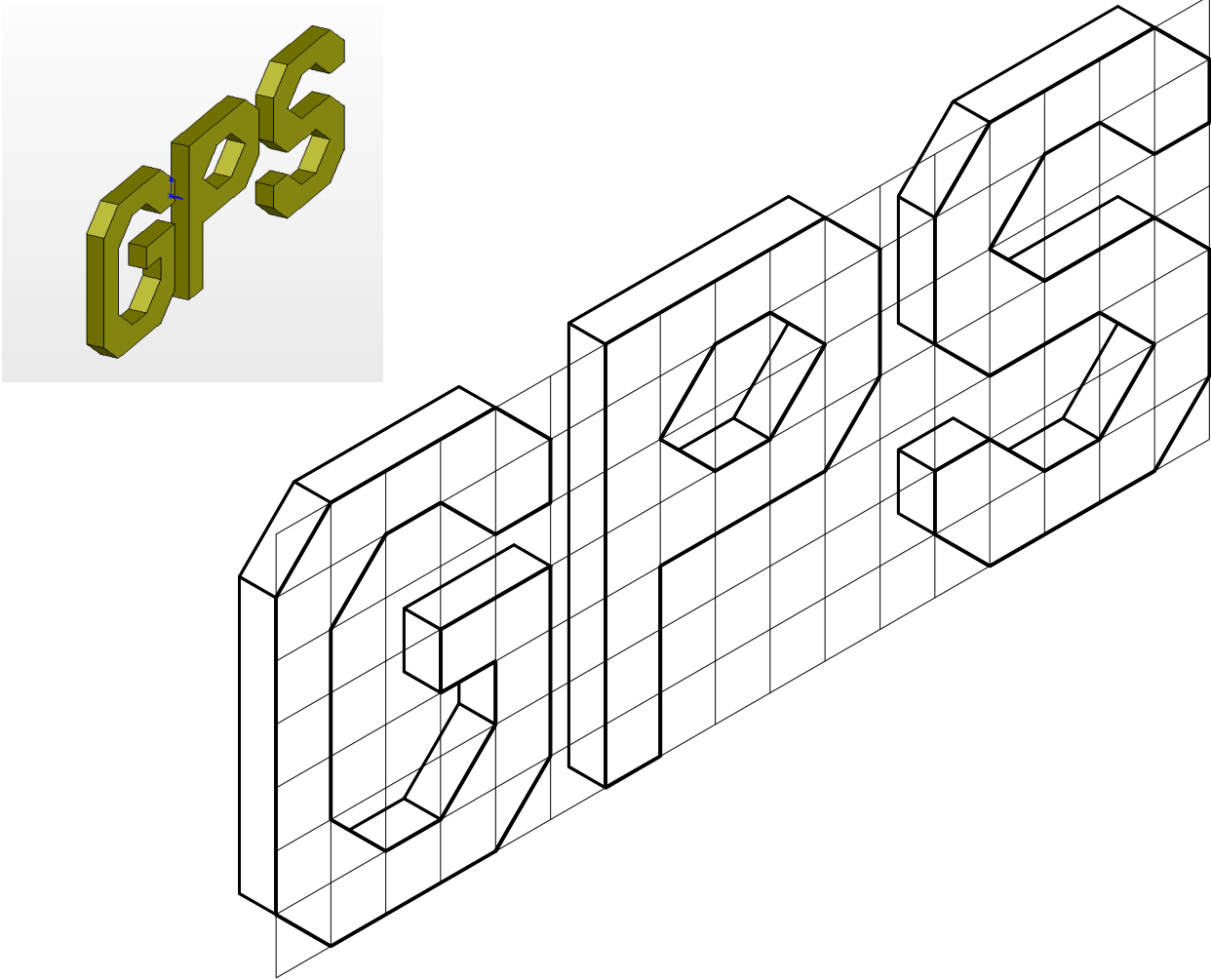
Circles (14)	
12	Large circles (<i>2x6 marks</i>)
2	Small circle – head (<i>2 marks</i>)
Body and legs (32)	
6	Ellipse ; Semi-major AB ; Semi- minor BC – (<i>2x3 marks</i>)
8	Construction for quarter ellipse (<i>incorrect application: 3 marks</i>)
8	Drawing curve of ellipse (<i>8,6,4 marks - depending on quality</i>)
4	Legs 4 lines (<i>4x1 mark</i>)
6	Arc AB 6 marks (<i>-1 inaccurate position of centre</i>)
Logo (12)	Logo inaccurately positioned <i>-1 mark</i>
6	6 Lines (<i>6x1 mark</i>)
6	Semi-circle and 2 arcs (<i>3x2 marks</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 3: Surface Development

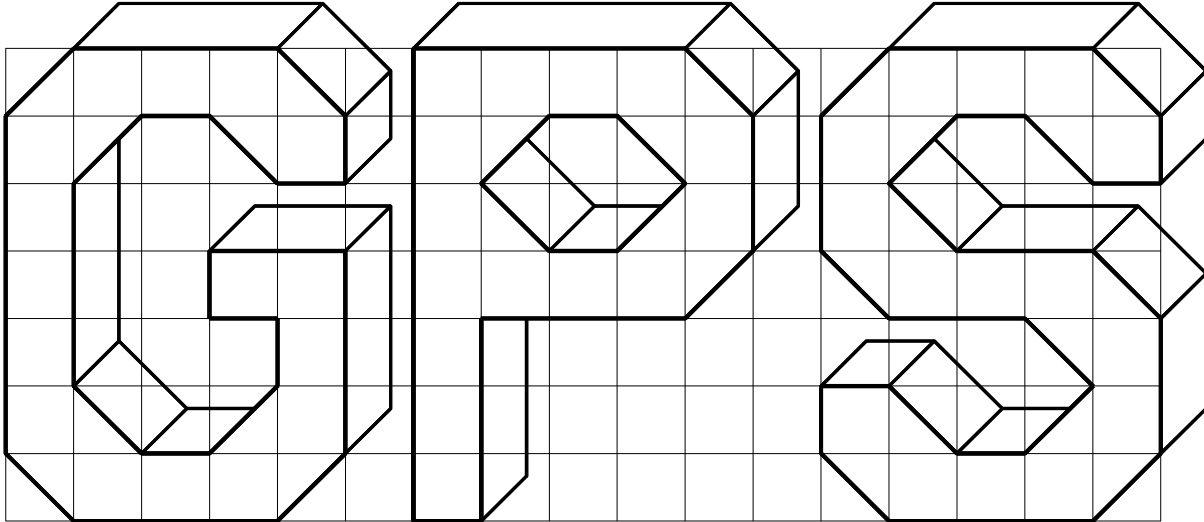


Orthographic (15)	
4	Elevation and plan in correct position
5	Elevation 4 lines (<i>3x1 mark + 2 marks for sloping line</i>)
6	Plan 4 lines and semi-circle (<i>4x1 mark + 2 for semi-circle</i>)
Development (43)	
8	Side A – 4 lines (<i>4x2 marks</i>)
8	Side B – 4 lines (<i>4x2 marks</i>)
9	Side C – 2 lines (<i>2x2 marks + 5 for correct length</i>)
8	Side D – 3 lines (<i>3x1 mark + 5 for correct length</i>)
6	Base E – 3 lines and semi-circle (<i>3x1 mark + 3 for semi-circle</i>)
4	Broken lines to indicate fold lines (<i>2x2 marks</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 4: Isometric Projection



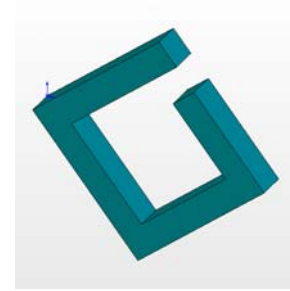
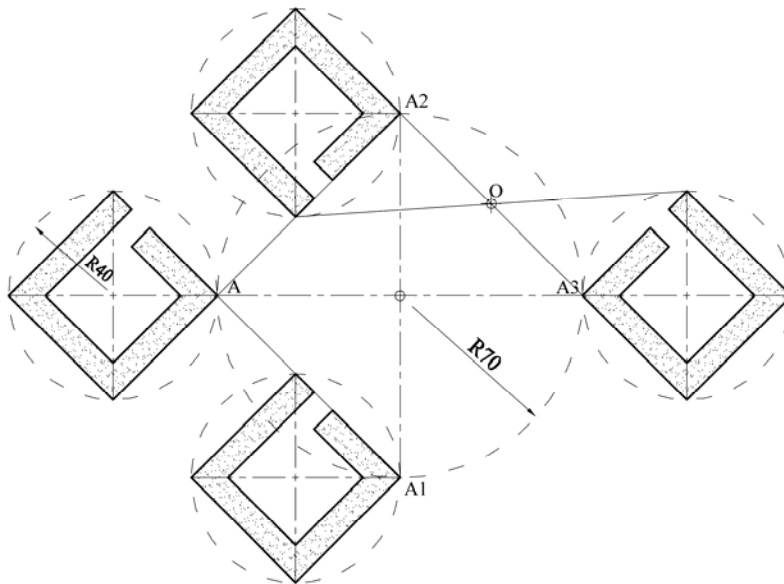
Setting Up (13)	
9	Height, length and width of grid (<i>3 x 3 marks</i>) deduct 2 each if inaccurate)
4	Isometric outline (deduct 2 + 2 if 30° angles not used)
Front Face (30)	
11	Letter G – 21 lines (half mark per line)
7	Letter P – 14 lines (half mark per line)
12	Letter S – 24 lines (half mark per line)
Complete width (15)	5 marks per letter (<i>3 marks per letter if all lines not included</i>)
(12)	Drafting, accuracy and presentation
Total 70	



Ceist 4: Oblique Projection

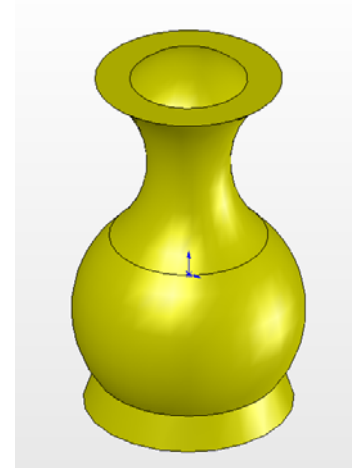
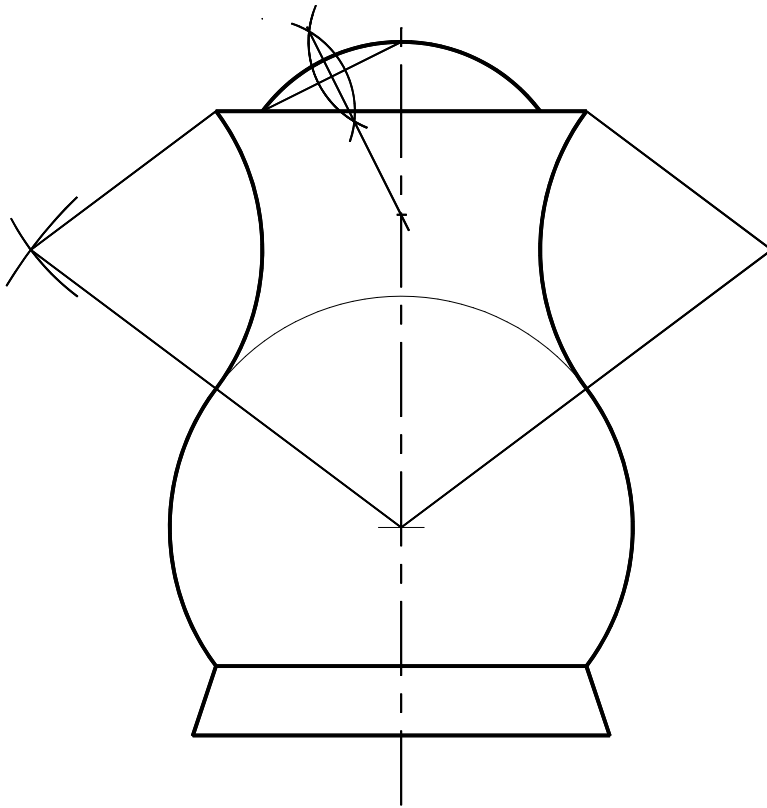
Setting Up (13)	
9	Height, length and width of grid (<i>3x3 marks</i>) (deduct 2 each if inaccurate)
4	Oblique outline (deduct 4 marks if 45° angle not used)
Front Face (30)	
11	Letter G – 21 lines (half mark per line)
7	Letter P – 14 lines (half mark per line)
12	Letter S – 24 lines (half mark per line)
Complete (15)	5 marks per letter (<i>3 marks per letter if all lines not included</i>)
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 5 Transformation Geometry



Setting up (16)	
4	Locating points A, A1, A2 and A3 (<i>4 x 1 mark</i>)
2	Locating point O
10	Draw given fig ; - circle <i>1 mark</i> - outside square <i>4 marks</i> – inside square <i>4 marks</i> – cut line <i>1 mark</i>
Translation (14)	
4	Drawing 4 lines parallel to A-A1 (<i>correct position and orientation</i>)
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 O.
10	Drawing Fig. as above
(12)	Drafting, accuracy and presentation
Total 70	

Ceist 6 – Circles and tangents



Outline (14)	
8	Base 4 lines (<i>4 lines x 2 marks</i>)
4	Height 120 (<i>-2 marks incorrect</i>)
2	Top line (<i>2 marks</i>)
Top Arc (12)	
2	Offset 15 and offset 30 (<i>2x1 mark</i>)
6	Construction for location of centre (<i>6 marks</i>) (<i>incomplete construction 3 marks</i>)
4	Drawing top arc (<i>4 marks</i>)
Body of jar (32)	
10	R50 circle - Striking arc to find centre 4 marks + 6 marks for drawing circle
11	R50 arc – Drawing 2 arcs (<i>2x2 marks</i>) point of contact (<i>2 marks</i>) Drawing arc (<i>5 marks</i>)
11	R50 arc – Drawing 2 arcs (<i>2x2 marks</i>) point of contact (<i>2 marks</i>) Drawing arc (<i>5 marks</i>)
(12)	Drafting, accuracy and presentation
Total 70	