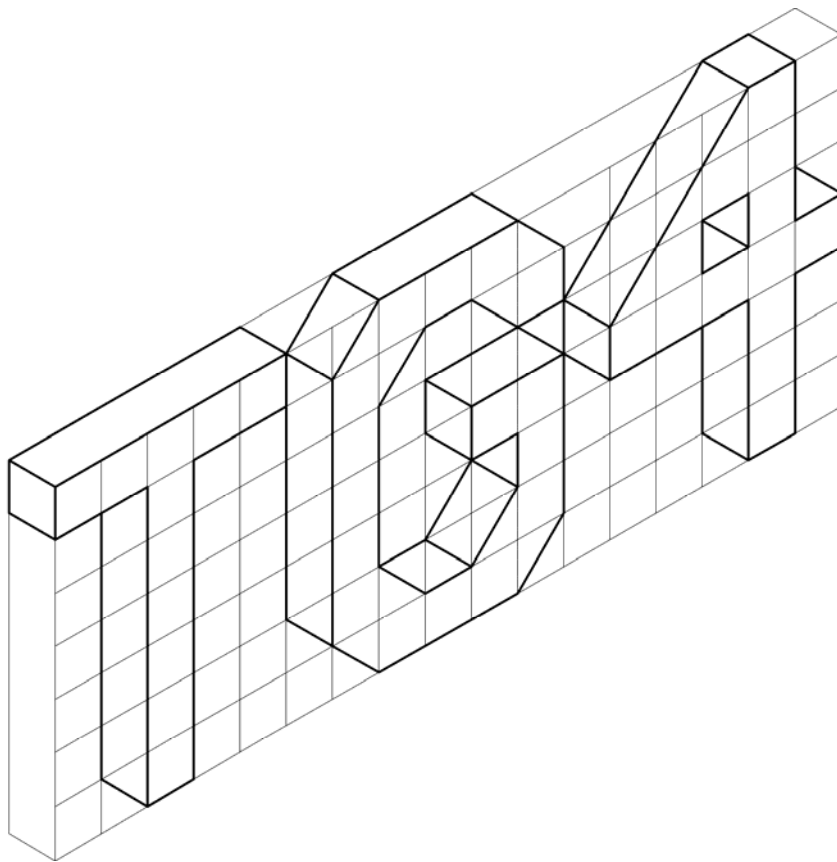




**Coimisiún na Scrúduithe Stáit**  
***State Examinations Commission***

***Junior Certificate Examination 2007***

***Grafaic Theicniúil***



***Gnáthleibhéal***  
***Scéim Mharcála***

***Roinn A agus B***

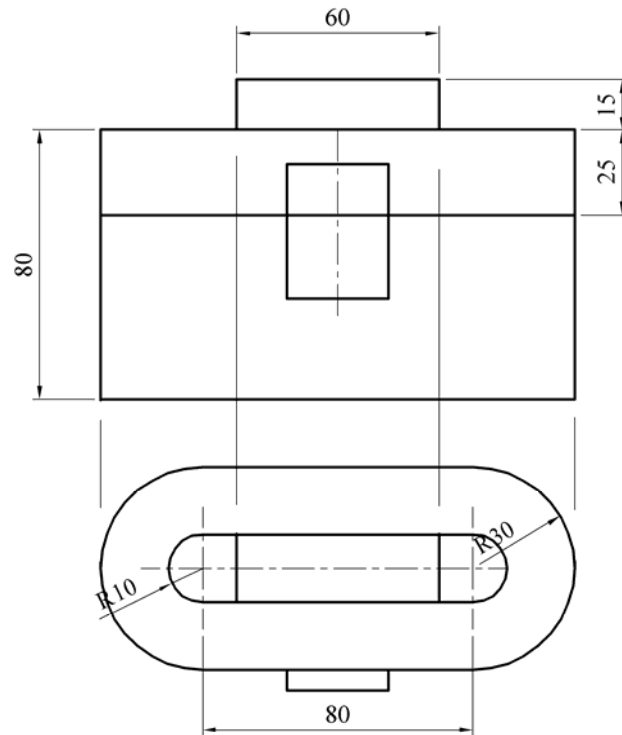
# Section A - Any ten questions from this section

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

<b>Q1</b>	12	Toaster. 4 lines – 3 marks per line ( <i>4x3 marks</i> )
<b>Q2</b>	9 3	For a <b>good quality</b> freehand pictorial sketch. ( <i>5 poor quality sketch, rule</i> ) For colour or shading.
<b>Q3</b>	6 6	Monitor or computer screen /screen or VDU Keyboard
<b>Q4</b>	6 6	Bisect vertical height of triangle Correct rectangle
<b>Q5</b>	4 4 4	Joining point <b>P</b> to focal points Bisection of angle Draw tangent
<b>Q6</b>	9 3	Well proportioned freehand isometric sketch. ( <i>rule used 5 marks</i> ) Correct proportions.
<b>Q7</b>	8 4	<b>Elevation of blocks:</b> 2 marks for each row correct Good proportion
<b>Q8</b>	6 6	A = 1.9 metres, ( <i>1.8 or 2.0 - 4 marks</i> ) B = 0.7metres, ( <i>0.6 or 0.8 - 4 marks</i> )
<b>Q9</b>	12	42 sq metres = 12 marks, ( <i>41 or 43 – 8 marks</i> )
<b>Q10</b>	3 3 6	3marks for lines at right angles to X1 – Y1 – ( <i>1 mark per line</i> ) 3 marks for correct height 1 mark per line for any 6 lines ( <i>6 x 1 marks</i> )
<b>Q11</b>	6 6	<b>(i) FILLET</b> <b>(ii) HATCH</b>
<b>Q12</b>	6 6	1 mark for each projections line of letter E to the vertical plane 6 marks for correct outline, ( <i>3 marks if outline not completely correct</i> )
<b>Q13</b>	12	12 marks for correct answer ( <i>3 marks for correct point of contact without construction</i> )
<b>Q14</b>	12	6 lines: 2 marks per line in <b>PERSPECTIVE</b> ( <i>6 x 2 marks</i> )
<b>Q15</b>	5 7	Correct angle of rotation of <b>ROAD SIGN</b> : ( <i>3 marks if angle is -60°</i> ) Complete figure - 7 lines; ( <i>1 mark per line</i> )
<b>Total 120</b>		Section A - Any ten questions; 12 marks per question ( <i>10 x 12 marks</i> )

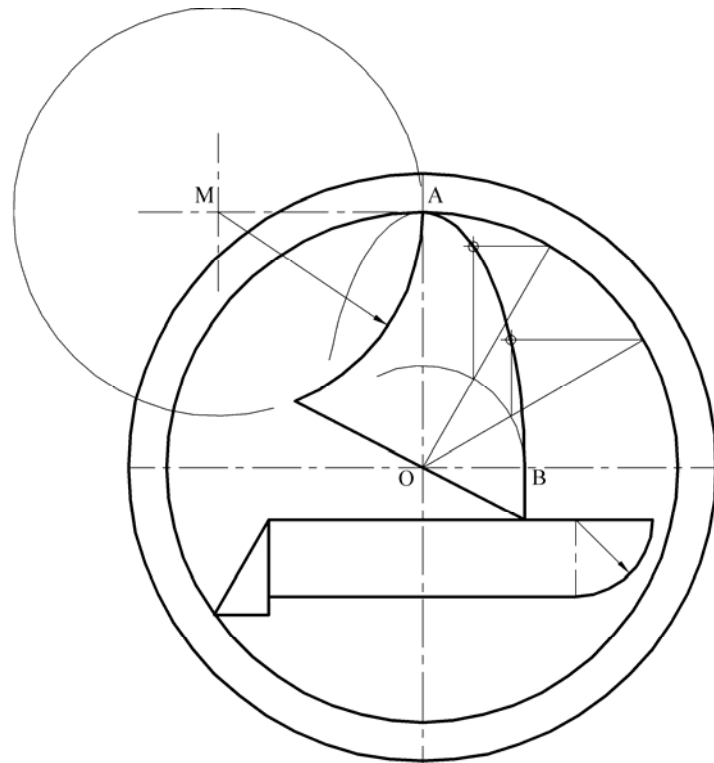
# Section B *(Any four questions from this section)*

## Ceist 1: Orthographic Projection



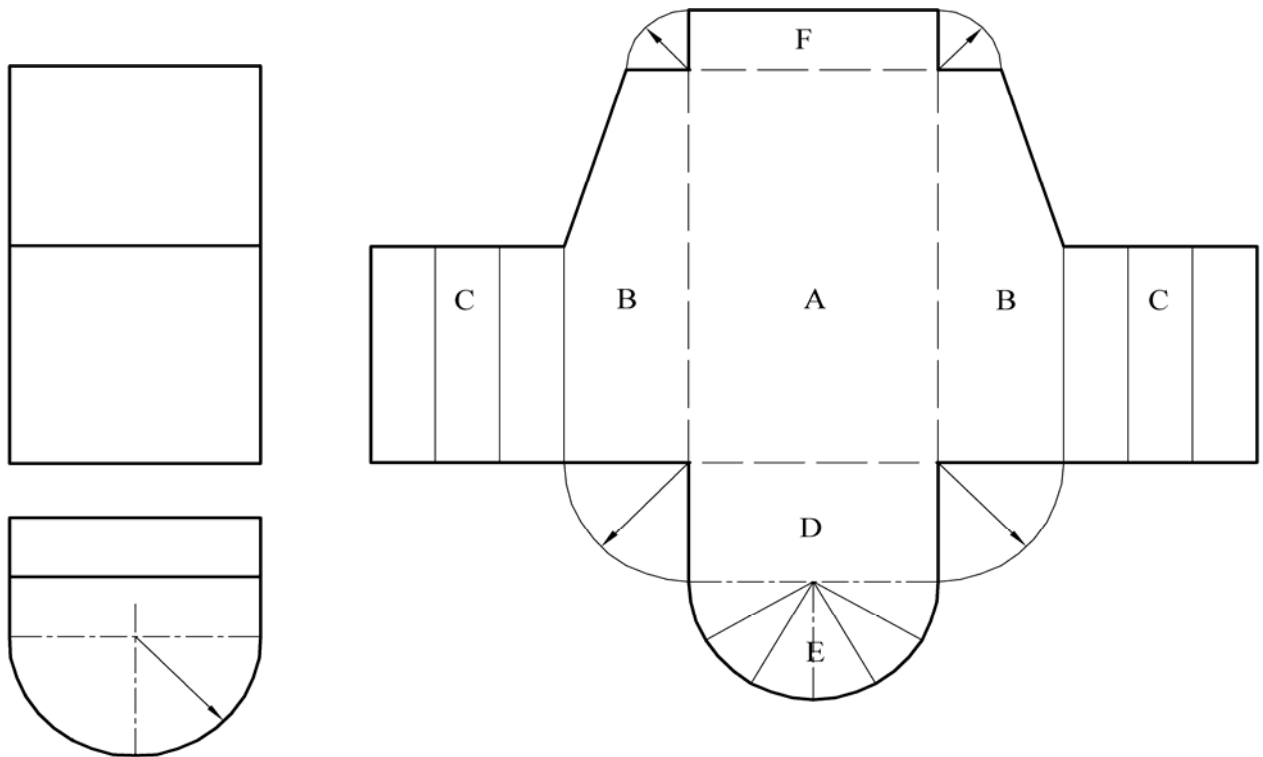
<b>Orthographic Outline (10)</b>	-
10	Plan and elevation positioned correctly -4 incorrect
<b>Elevation (20)</b>	
10	Body outline <i>(5x2 marks)</i>
6	Handle <i>(3x2 mark)</i>
4	1 mark for each line in catch <i>(4x1 marks)</i>
<b>Plan (24)</b>	
6	<b>Large circles</b> – two – 3 marks per circle <i>(2 x 3 marks)</i>
4	<b>Tangent lines:</b> two – 2 marks per line <i>(2 x 2 marks)</i>
6	<b>Small circles:</b> – two – 3 marks per circle <i>(2 x 3 marks)</i>
4	<b>Handle:</b> 1 mark for each line in plan <i>(4 x 1 marks)</i>
4	<b>Catch:</b> centred and 3 lines <i>(4 x 1 marks)</i>
<b>Dimension lines (4)</b>	
4	1 mark per dimension line
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	

**Ceist 2: Logo for sailing club**



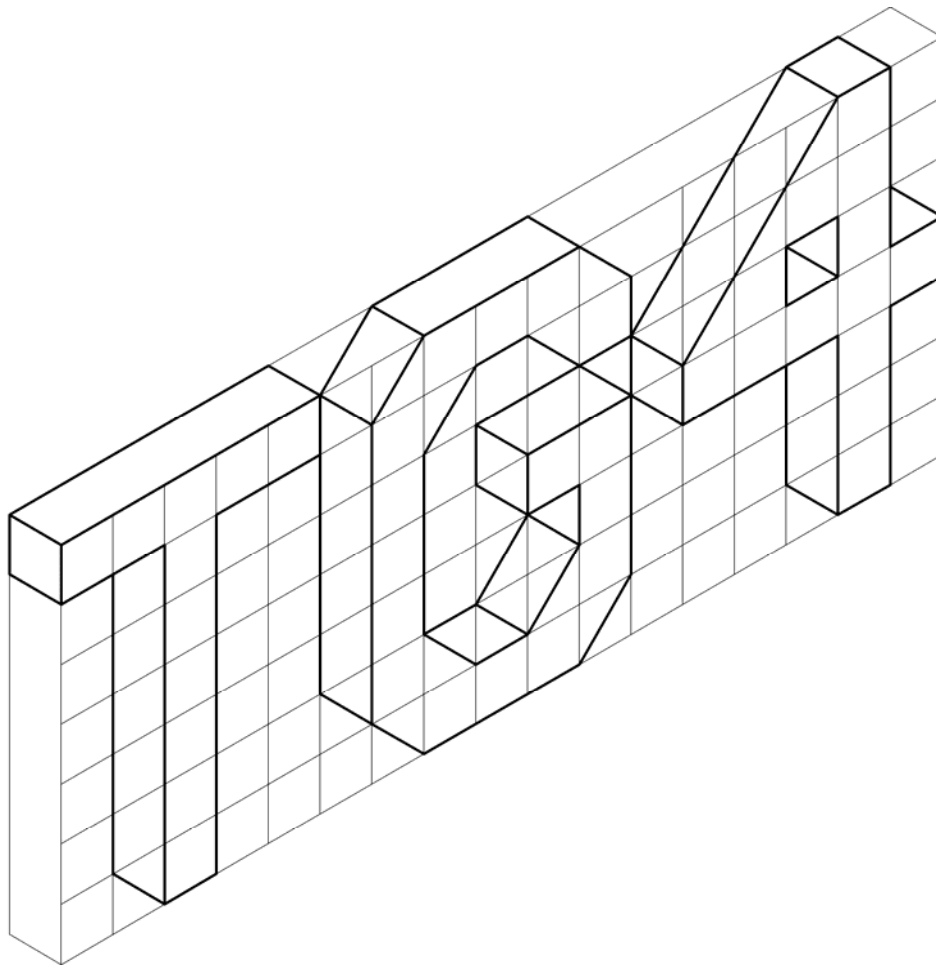
<b>Circles and body (28)</b>	
12	Large circles - 6 marks per circle ( <i>2 x 6 marks</i> )
8	Body of boat – 4 lines – 2 marks per line ( <i>4 x 2 marks</i> )
4	Quadrant, -2 incorrect position or radius
4	Rudder – lines and angle
<b>Sail (30)</b>	
4	<b>Ellipse:</b> Semi major <b>OA</b> ; semi-minor axis <b>OB</b> – ( <i>2 x 2 marks</i> )
8	Construction for quarter ellipse ( <i>incorrect application - 6marks</i> )
6	Join points to form smooth curve of ellipse ( <i>6,4,2 marks</i> )
6	<b>Arc</b> Centre M ( <i>3 marks centre, 3 marks arc</i> )
6	Vertical line and bottom line of sail through centre( <i>2 x 3 marks</i> )
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	

### Ceist 3: Surface Development



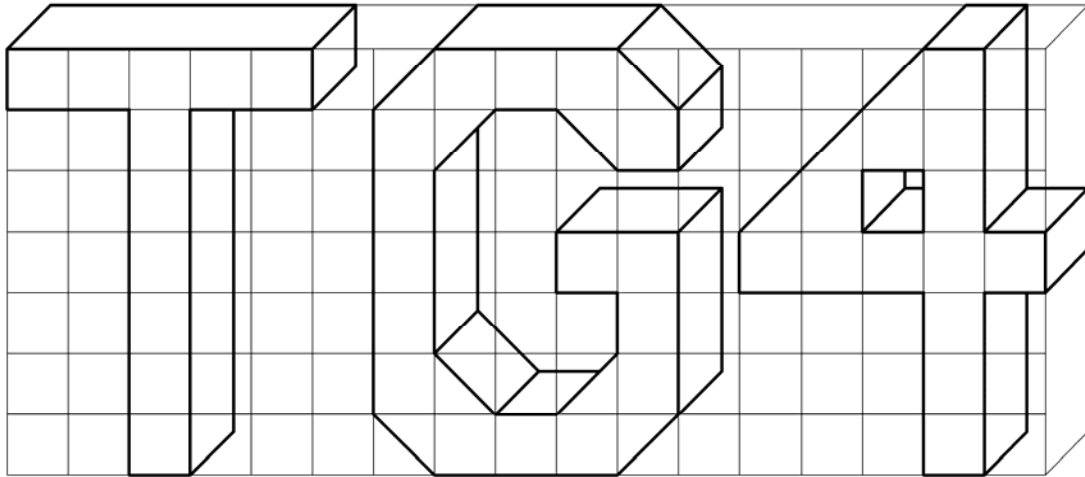
<b>Orthographic (14)</b>	
4	Elevation and plan in correct position
5	Elevation, - 1 mark each line <i>(5 x 1 marks)</i>
5	Plan - 1 mark each line <i>(5 x 1 marks)</i>
<b>Development (44)</b>	
8	Back A: 4 lines <i>(4x 2 marks)</i>
8	Sides B and B – 8 lines <i>(1 mark per line for each side)</i>
10	Sides C: <i>(one mark per line and 7 marks for correct length)</i>
4	Base D: <i>(2 marks per line)</i>
4	Semi circle E:
6	Top F: <i>(6 marks)</i>
4	Broken lines to indicate fold lines <i>(4 x 1 marks)</i>
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	

**Ceist 4: Isometric Projection**



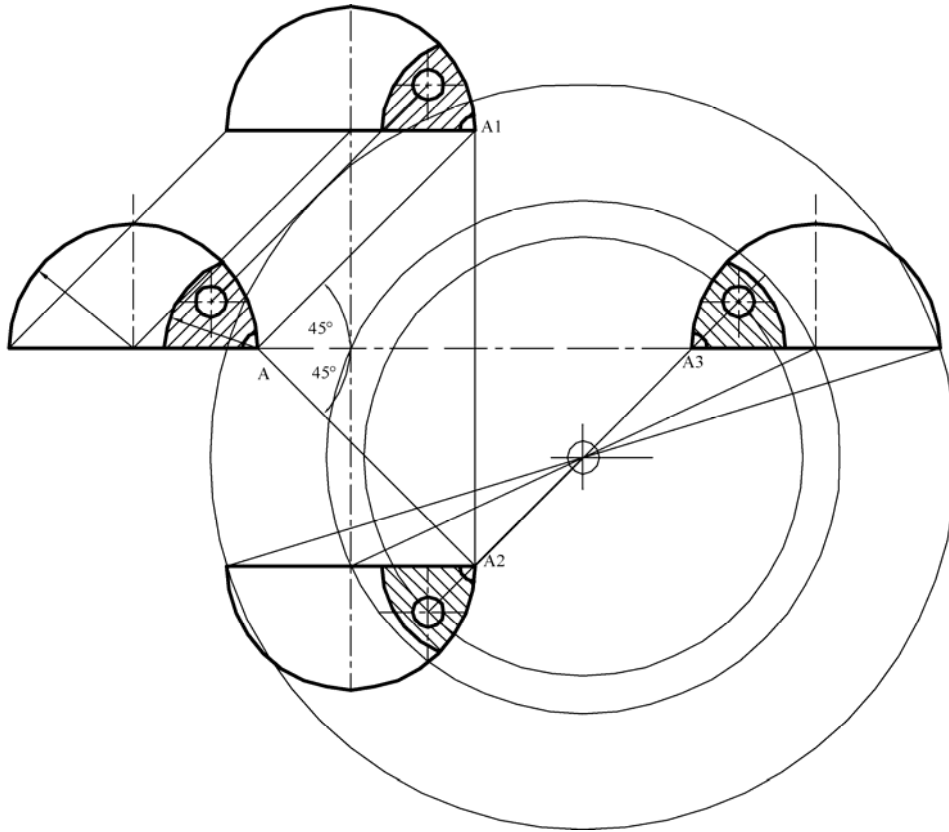
<b>Setting Up (8)</b>	
6	Height, length and width of grid ( <b>deduct 1 each if inaccurate</b> )
2	Isometric outline ( <b>deduct 1 + 1 if 30° angles are not used</b> )
<b>Front Face (44)</b>	
8	Letter <b>T</b> - 1 mark per line
21	Letter <b>G</b> - 1 mark per line
15	Number <b>4</b> - 1 mark per line
<b>Complete width (6)</b>	2 marks per letter
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	

### Ceist 4: Oblique Projection



<b>Setting Up (8)</b>	
6	Height, length and width of grid <b>(deduct 2 each if inaccurate)</b>
2	Oblique outline <b>(deduct 2 marks if 45° angle not used)</b>
<b>Front Face (44)</b>	
8	Letter <b>T</b> - 1 mark per line
21	Letter <b>G</b> - 1 mark per line
15	Number <b>4</b> - 1 mark per line
<b>Complete (6)</b>	2 marks per letter
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	

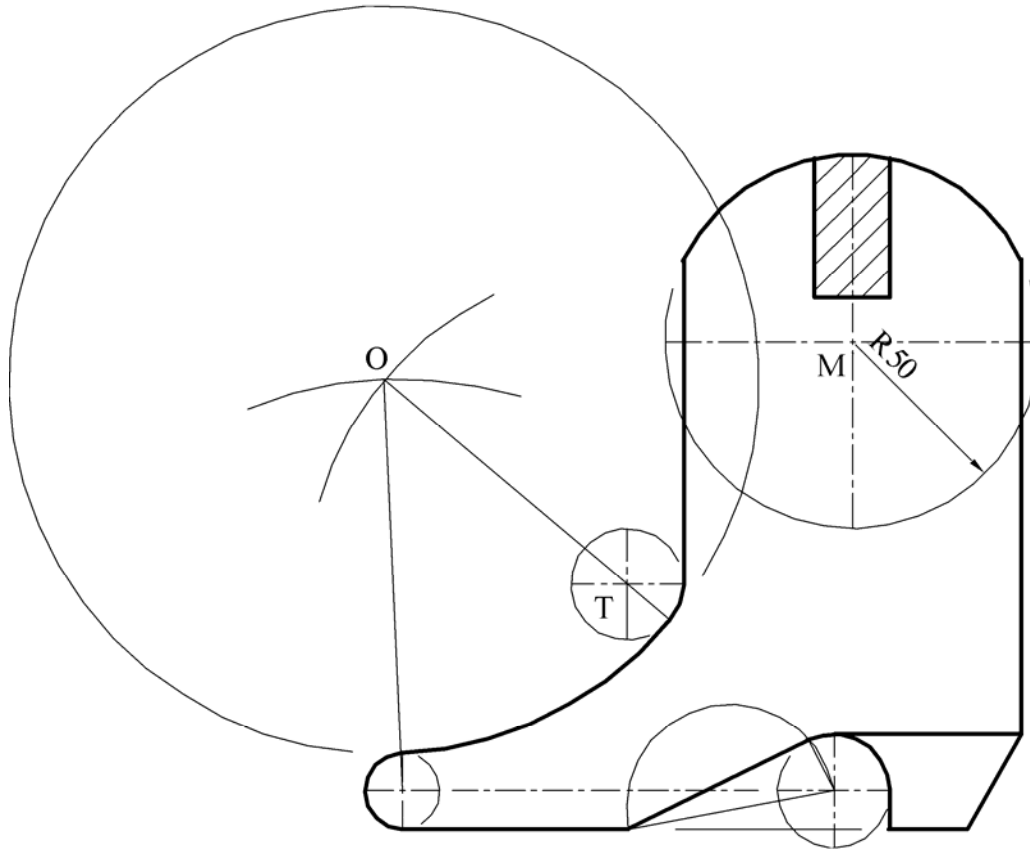
# Ceist 5 Transformation Geometry



<b>Setting up (16)</b>	
4	Locating points A, A1, A2 and A3 ( <i>4 x 1 marks</i> )
2	Locating point O
10	<b>Draw given fig:</b> - semi-circle 4 marks, base 2 marks, small arc 2 marks, eye 2 marks
<b>Translation (14)</b>	
4	Drawing 4 lines parallel to A-A1
10	Drawing fig. as above
<b>Axial Symmetry (14)</b>	
4	Projection lines perpendicular to A-A3
10	Drawing fig. as above
<b>Central Symmetry (14)</b>	
4	Drawing lines through centre point O.
10	Drawing fig. as above
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	



**Ceist 6 – Circles and tangents – a boot**



<b>Outline (40)</b>	
12	Overall height <b>180</b> , width <b>90</b> , length of sole <b>130</b> ( <i>3 x 4 marks</i> )
16	Circle M and 3 small circles ( <i>4 x 4 marks</i> )
4	Complete heel ( <i>4 x 1 marks</i> )
4	Complete flap (hatched) ( <i>4 x 1 marks</i> )
4	Vertical lines for side of boot ( <i>2 x 2 marks</i> )
<b>Tangents (18)</b>	
4	Sloping sole - ( <i>correct construction 3 marks +1 mark for line</i> )
2	Point of contact
4	Locating centre of large circle O ( <i>arcs 2 x 2 marks</i> )
4	Drawing arc
4	Points of contact ( <i>2 x 2 marks</i> )
<b>(12)</b>	<b>Drafting, accuracy and presentation</b>
<b>Total 70</b>	