

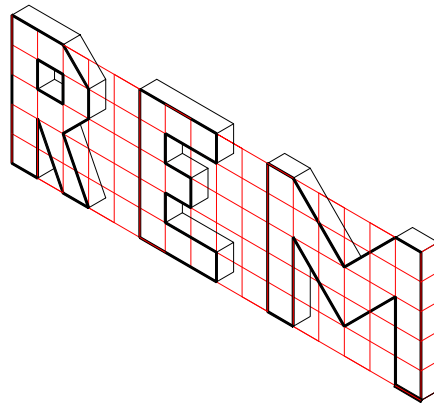


Coimisiún na Scrúduithe Stáit  
*State Examinations Commission*

*Junior Certificate Examination 2004*

*Technical Graphics*

*Ordinary Level*



*Marking Scheme*

<b>Q</b>	<b>Marks</b>	<b>Section A</b> <i>Award 2 marks for setting up the outline of each solution in this section.</i>
<b>Q1</b>	6 6	2 marks for each correct line in the plan 1 mark for each line in the elevation + 1 mark each, if hidden detail shown.
<b>Q2</b>	9 3	Picnic table correctly depicted in a <u>good quality</u> freehand pictorial sketch. Shading. 3 excellent; 2 good; 1 poor
<b>Q3</b>	6 6	Scanner Digital camera
<b>Q4</b>	12	Correct rectangle
<b>Q5</b>	6 6	A is a Tangent B is a Normal
<b>Q6</b>	6 6	Offset 15mm vertically Offset 15mm horizontally
<b>Q7</b>	12	1 mark for each line
<b>Q8</b>	12	A = 5.5m ; B = 2.0m      5.4/5.6m or 1.9/2.1m award 4 marks each
<b>Q9</b>	12	28 tiles                      26/30 tiles give 8 marks
<b>Q10</b>	3 5 4	Projections perpendicular to the X <sub>1</sub> —Y <sub>1</sub> line, 1 mark each line Correct heights, 3 apex + 2 truncation Completing the auxiliary figure, 1 mark each line
<b>Q11</b>	12	6 marks each figure, 2 each row x 3 rows
<b>Q12</b>	4 5 3	Projections to the vertical plane Outline figure, 1 mark each line Shading
<b>Q13</b>	12	Correct construction to locate the points of contact
<b>Q14</b>	8 4	Projections to the V.P.'s, 2 marks each line 2 vertical lines, 2 marks each
<b>Q15</b>	12	Correct position of chair - award 8 marks if clockwise and 60°

**Section B**

Marks for drafting, accuracy and presentation (Total 12 marks)

Apply these mark to Section B only, Questions 1 to 6

**Drafting:** the skills of drawing, line type, use of correct pencils 4 marks

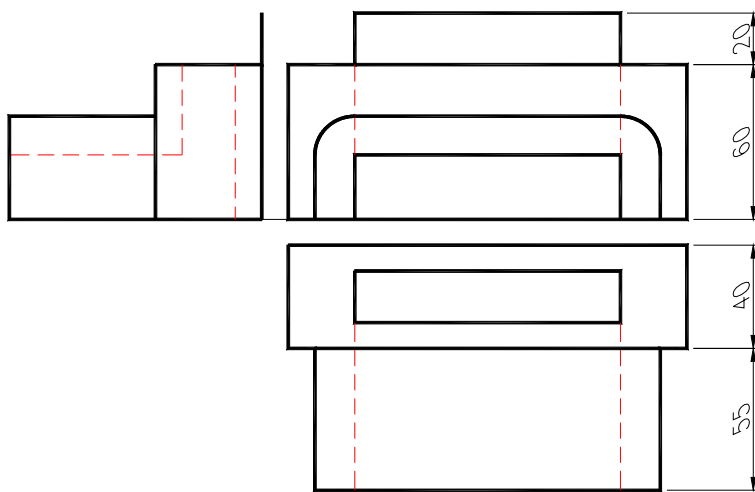
**Accuracy:** precision, exactness, absence of error 4 marks

**Presentation:** overall neatness and layout 4 marks

When applying the marks under each heading, the following criteria should apply:

Criteria	Excellent	Good	Fair	Poor
Marks	4	3	2	1

**Q.1 2004 Section B Orthographic Projection**



**Orthographic Outline (10)**

**Elevation (21)**

- 13 1 mark each line
- 6 3 marks each arc
- 2 Hidden detail

**End Elevation (10)**

- 7 1 mark each line
- 3 Hidden detail

**Plan (13)**

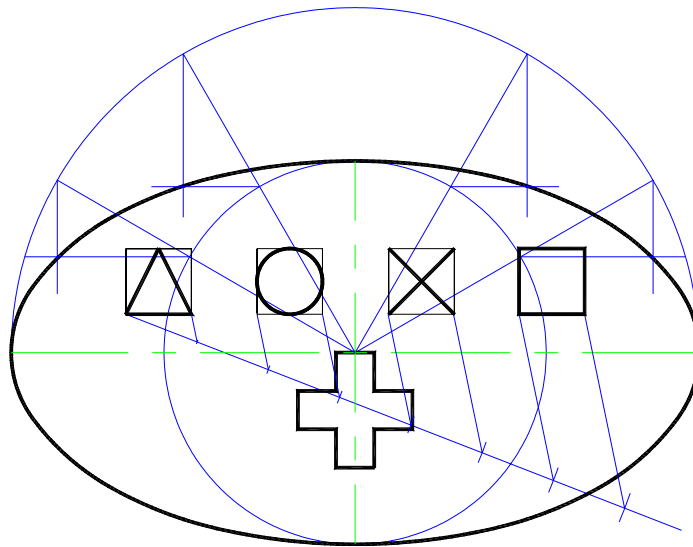
- 11 1 mark each line
- 2 Hidden detail

**Dimension lines (4)**

- 4 1 mark each line

**Drafting, accuracy and presentation (12)**

**Q.2 2004 Section B Ellipse**



**Ellipse (26)**

- 6 Major & Minor axis, 3 marks each
- 14 **Locating points on the curve**
- 6 Drawing curve

**Setting up (12)**

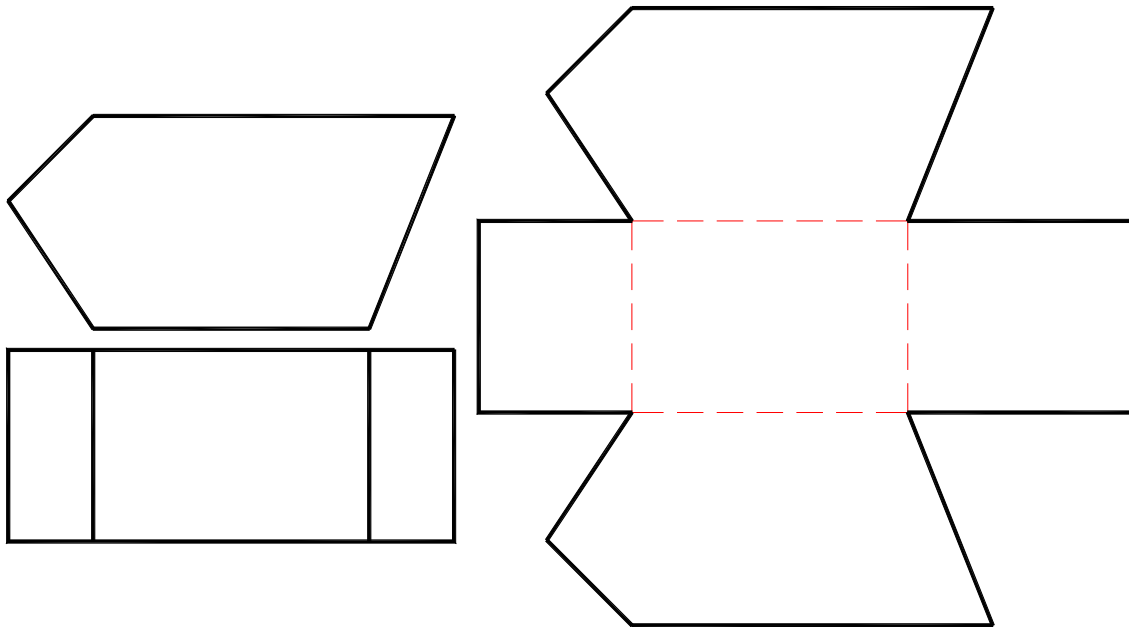
- 2 10mm offset from the centre line
- 2 120mm line
- 6 **Dividing 120mm line into 7 equal parts**
- 2 Setting height

**Completing Buttons (20)**

- 3 Triangle
- 3 Circle
- 3 X
- 3 Square
- 8 Cross, 2 marks each arm

**Drafting, accuracy and presentation (12)**

**Q.3 2004 Section B Surface Development**



**Orthographic Outline (23)**

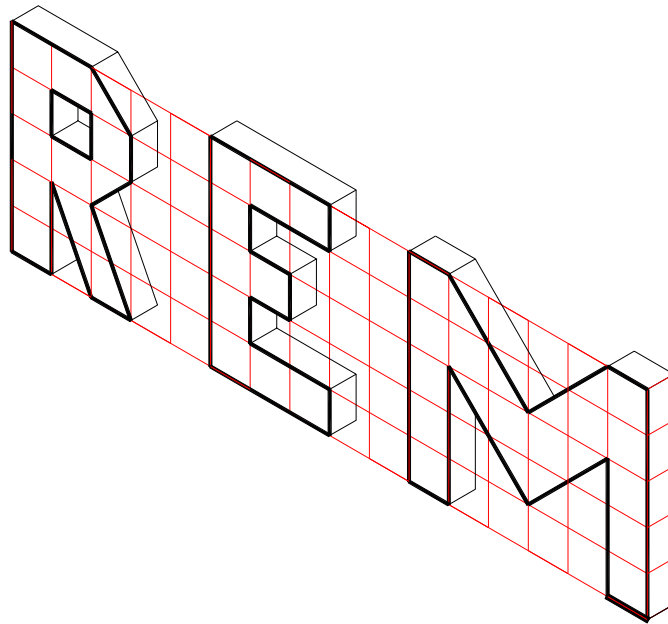
- 7 Plan in correct position
- 10 Elevation, 2 marks each line
- 6 Plan, 1 mark each line

**Development (35)**

- 10 Sides A and B, 1 mark each line
- 8 Sides C, D and R, 1 mark each line
- 4 Fold lines, 1 mark each
- 5 One piece development
- 8 True length of D and E, 4 marks each

**Drafting, accuracy and presentation (12)**

**Q.4 2004 Section B Isometric**



**Setting Up (15)**

- 9 Outline height, length and width  
**(deduct 2 marks each if inaccurate)**
- 6 Isometric outline  
**(deduct 3 + 3 marks if 30° angles are not used)**

**Front Face REM (19)**

- 14 R, 1 mark each line
- 12 E, 1 mark each line **(Divide these marks by 2)**
- 12 M, 1 mark each line

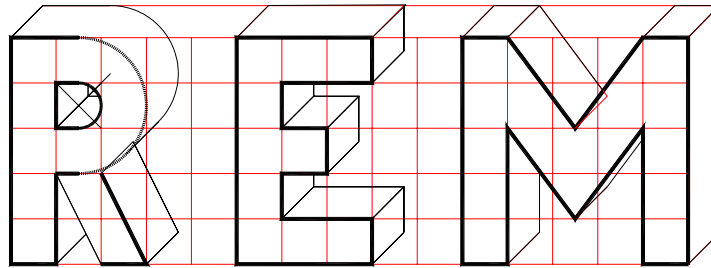
**Completion (21)**

- 13 R, 1 mark each line
- 17 E, 1 mark each line **(Divide these marks by 2)**
- 11 M, 1 mark each line

**Shading (3)**

**Drafting, accuracy and presentation (12)**

**Q.4 2004 Section B Oblique**



**Setting Up (15)**

- 9 Outline height, length and width  
**(deduct 2 marks each if inaccurate)**
- 6 Oblique outline  
**(deduct 6 marks if 45° angle is not used)**

**Front Face REM (19)**

- 14 R, 1 mark each line
  - 12 E, 1 mark each line
  - 12 M, 1 mark each line
- (Divide these marks by 2)**

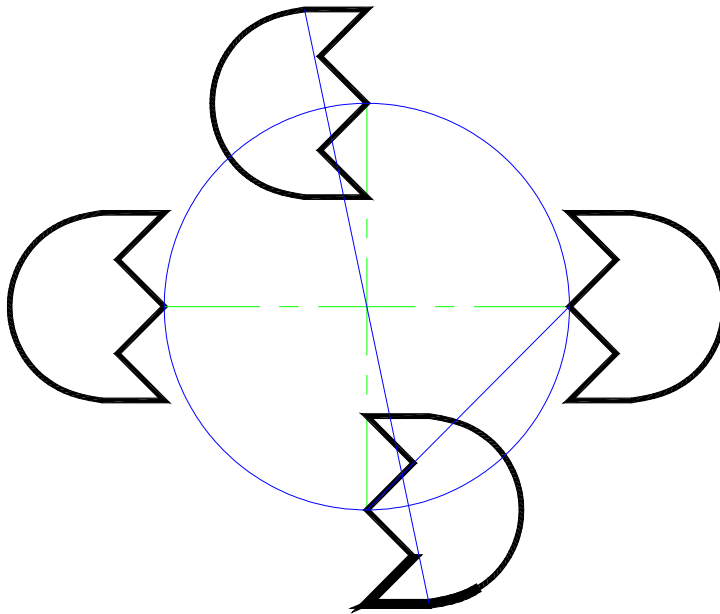
**Completion (21)**

- 13 R, 1 mark each line
  - 17 E, 1 mark each line
  - 11 M, 1 mark each line
- (Divide these marks by 2)**

**Shading (3)**

**Drafting, accuracy and presentation (12)**

**Q.5 2004 Section B Transformation Geometry**



**Setting up (16)**

- 6 R65 circle 4 marks, centre lines 1 mark each
- 10 Fig. F, 1 mark each line, 4 marks semi-circle

**Axial Symmetry (14)**

- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

**Translation (14)**

- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

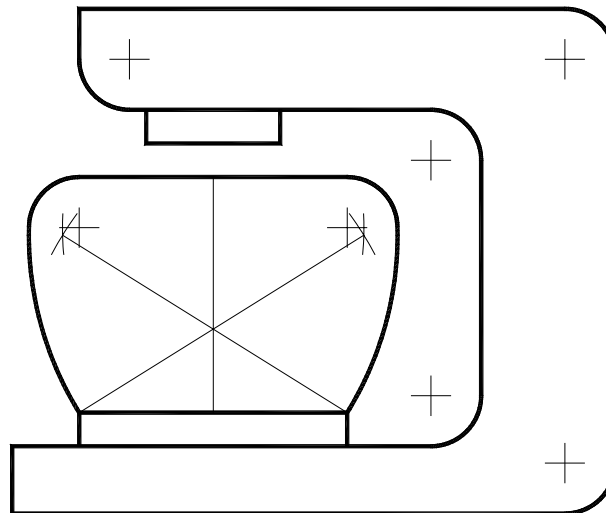
**Central Symmetry (14)**

- 4 Locating position of Fig. F
- 10 Drawing Fig. F, as above

**Drafting, accuracy and presentation (12)**



**Q.6 2004 Section B Plane Figures 2004**



**Setting Up (28)**

28 All horizontal and vertical lines, 2 marks each  
(excluding 80mm line, top of bowl)

**Centres for R15 Arcs (15)**

15 5 arcs x 3 marks each  
(1 mark locating centre + 2 marks arc)

**Bowl (15)**

5 80mm line 1 mark + 2 marks each circle  
10 Construction for R100 arcs, 5 marks each  
(3marks for each construction + 2 marks for each arc)

**Drafting, accuracy and presentation (12)**