



Junior Certificate Examination 2005

Technical Graphics
Higher Level
Section B (280 marks)

Monday 20 June
Morning 9:30 - 12:30

Instructions

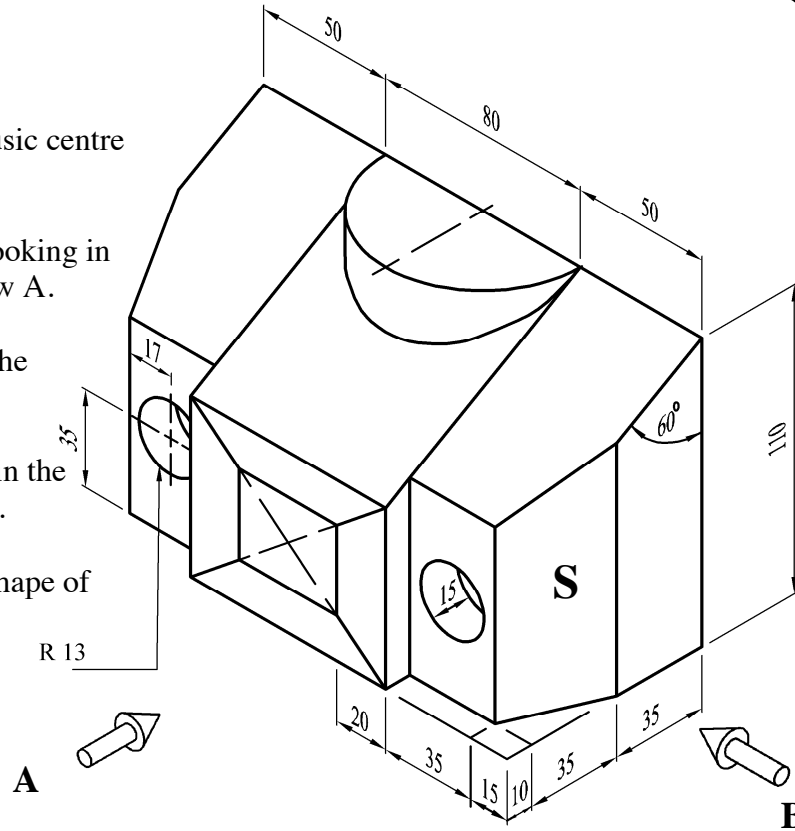
- (a) ***Any four*** questions to be answered.
- (b) All questions in this section carry equal marks.
- (c) The number of the question must be distinctly marked by the side of each answer.
- (d) Work on ***one side*** of the paper only.
- (e) Write your examination number on each sheet of paper used.

SECTION B (ANSWER ANY FOUR QUESTIONS - ALL QUESTIONS CARRY EQUAL MARKS)

1.

A pictorial view of a music centre is shown.

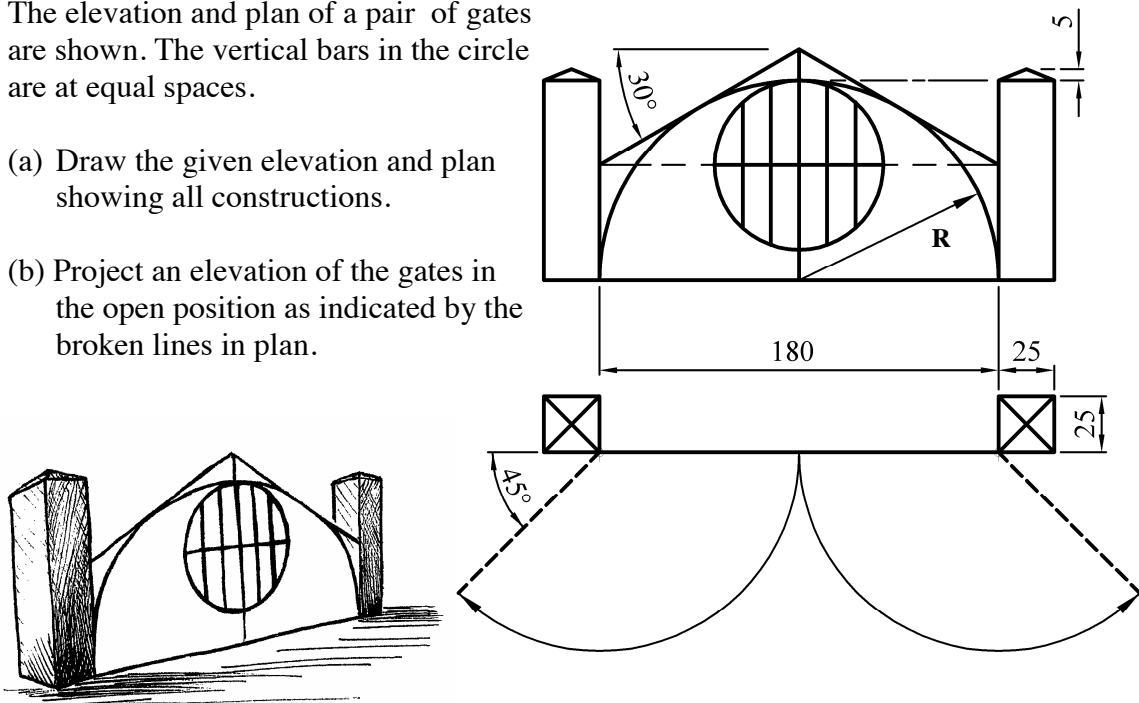
- Draw an elevation looking in the direction of arrow A.
- Project a plan from the elevation.
- Project an end view in the direction of arrow B.
- Determine the true shape of Surface S.



2.

The elevation and plan of a pair of gates are shown. The vertical bars in the circle are at equal spaces.

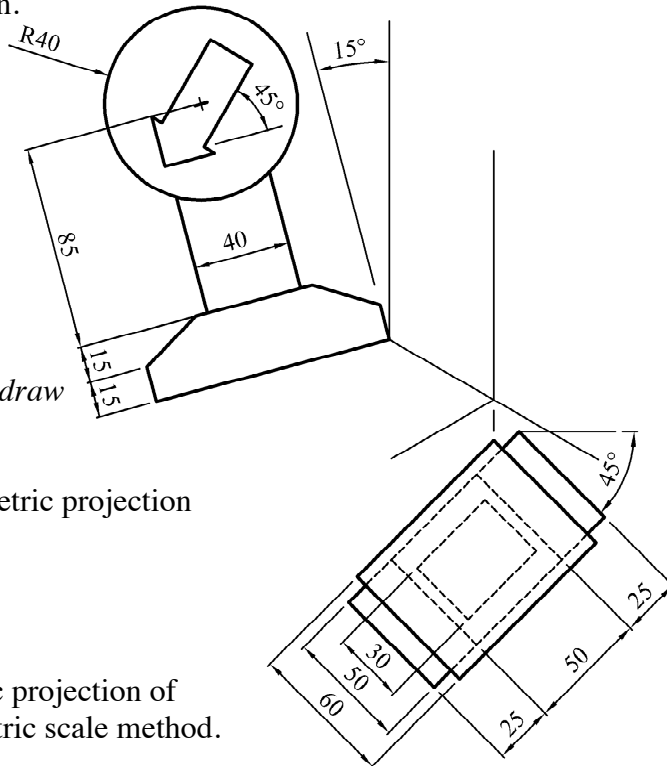
- Draw the given elevation and plan showing all constructions.
- Project an elevation of the gates in the open position as indicated by the broken lines in plan.



3.

Shown are the axonometric axes required for the isometric projection of a road sign.

- (a)
- Draw the axonometric axes as shown.
 - Draw the plan orientated at 45° as shown.
 - Draw the side elevation orientated at 15° as shown.
Use your own dimensions to draw the given arrow.
 - Draw the completed axonometric projection of the road sign.



OR

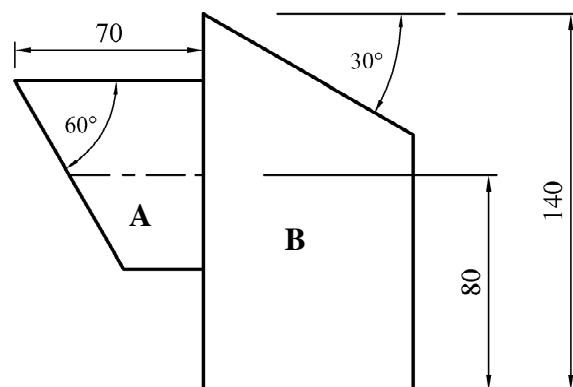
- Draw the completed isometric projection of the road sign using the isometric scale method.

4.

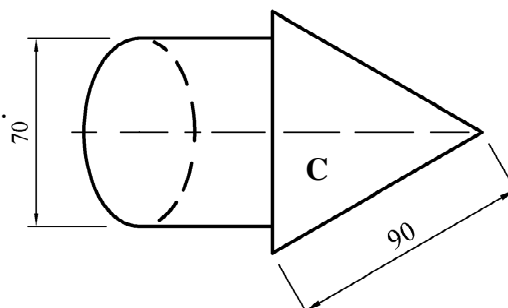
The elevation and plan of the top portion of a traffic light are shown.

The design is based on a truncated cylinder and a truncated equilateral triangular prism.

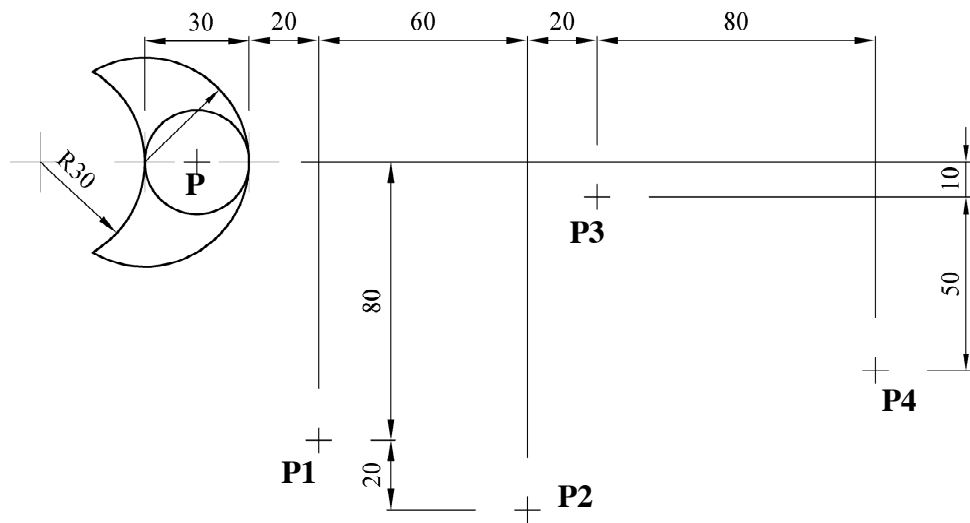
- Draw the given plan and elevation.



- Draw the development of the curved surface **A** of the cylinder.
- Draw the development of the vertical surface **B** and the sloping surface **C** of the prism.



5.



The figure shows a logo for a company called DAY & NIGHT deliveries. The logo is subject to transformations in the following order;

- (i) Axial symmetry
- (ii) Central symmetry
- (iii) Translation
- (iv) Rotation clockwise through 120° .

P1, P2, P3 and **P4** show the position of **P** under each of these transformations.

Draw the given figure and determine the image of the logo under each of the transformations.

6.

The figure shows the design of a head rest for a car seat. A sketch of the head rest is also shown.

The curve ABC is a parabola with vertex B.

The arc DEF is tangential to the ellipse at E.

A and C are focal points of the ellipse.

Draw the given design.

Show clearly the constructions necessary to determine the major and minor axes of the ellipse and the centre of the arc DEF.

