Junior Certificate Examination, 2016

Technical Graphics
Ordinary Level
Section B
(280 marks)

Monday, 20 June
Morning 9:30 - 12:00

Instructions

(a) Answer any four questions. All questions carry equal marks.

(b) The number of the question must be distinctly marked by the side of each answer.

(c) Work on one side of the answer paper only.

(d) Write your examination number on each sheet of paper used.
SECTION B. Answer any four questions. All questions carry equal marks.

1. The figure shows a design for a piano. A 3D graphic is also shown.

Draw:
(a) An elevation in the direction of arrow A.
(b) An end view in the direction of arrow B.
(c) Insert any four dimensions.

2. The graphics show the outline of a motorsport helmet. The design is based on circles, parallel lines and a semi-ellipse as shown.

The curve ABC is a semi-ellipse. AC is the major axis of the ellipse and is 130 mm long. OB is half the minor axis and is 50 mm long.

Draw the given ellipse and complete the design showing clearly all constructions.
3. The figure shows the bucket of a toy mechanical digger. A 3D graphic is also shown.

Draw:
(a) An elevation in the direction of arrow A.
(b) A plan projected from the elevation.
(c) The complete surface development of the bucket.

4. The figure shows the elevation and plan of a band logo.

The grid in elevation is made up of 15 mm squares and the thickness in plan is 10 mm.

Draw one of the following views: (a) An isometric view of the initials. or (b) An oblique view of the initials.

Note: The solution must be presented on standard drawing paper.
5. The graphics show the design of a logo for a rugby tournament.

(a) Draw the given logo and then locate the points $A$, $A_1$, $A_2$, $A_3$ and $P$ as shown.

(b) Find the image of the given logo under the following transformations:

(i) From point $A$ to $A_1$ by a translation;

(ii) From point $A_1$ to $A_2$ by an axial symmetry in the line $A$-$A_3$;

(iii) From point $A_2$ to $A_3$ by a central symmetry in the point $P$.

Note: All geometric constructions must be clearly shown on your drawing sheet.

6. The figure shows an outline design for a ladies shoe.

Draw the design showing clearly how to find the centres of the circles shown.

Show all construction lines, tangents and points of contact.