Leaving Certificate Examination, 2018

Design & Communication Graphics
Higher Level

Section A (60 marks)

Wednesday, 20 June
Afternoon, 2:00 - 5:00

This examination is divided into three sections:

SECTION A (Core - Short Questions)
SECTION B (Core - Long Questions)
SECTION C (Applied Graphics - Long Questions)

SECTION A

• Four questions are presented.
• Answer any three on the A3 sheet overleaf.
• All questions in Section A carry 20 marks each.

SECTION B

• Three questions are presented.
• Answer any two on drawing paper.
• All questions in Section B carry 45 marks each.

SECTION C

• Five questions are presented.
• Answer any two (i.e. the options you have studied) on drawing paper.
• All questions in Section C carry 45 marks each.

General Instructions:

• Construction lines must be shown on all solutions.
• Write the question number distinctly on the answer paper in Sections B and C.
• Work on one side of the drawing paper only.
• All dimensions are given in metres or millimetres.
• Write your Examination number in the box below and on all other sheets used.

Examination Number: 

SECTION A - Core - Answer any three of the questions on this A3 sheet.

A-1. The 3D graphic shows a bicycle shelter. The drawing shows an incomplete dimetric projection of a similar shelter using the axonometric axes method. The horizontal plane is also included.
   (a) Complete the axonometric projection of the bike shelter.
   (b) A line joining Y to B represents the straight line path of a football. Show the point of impact of the ball with the glass roof in the axonometric view.

A-2. The graphic below shows a group of fishermen. Two fishing rods are represented by the skew lines AB and CD on the right.
   (a) Determine the projections of the shortest horizontal line between the two skew lines.
   (b) Determine, and indicate the distance from this line to the horizontal plane.

A-3. The image on the right shows the Salmon Weir Bridge over the river Moy in Co. Mayo. The drawing below shows an incomplete elevation of the bridge.
   (a) The curved support pillar is based on a parabola which is inscribed in a rectangle. V is the vertex of the parabola and P is a point on the curve. Draw the parabola.
   (b) F is the focal point of the parabola. The point P is anchored to the bridge surface (axis) by two cable stays. The line PF is one cable. The second cable is inclined at 25° to a tangent at P. Construct the tangent at point P and draw both cables.

A-4. The graphic shows a spidercam used for aerial coverage of sports events. It is supported by four cables. The drawing shows the projections of the cables.
   (a) Find the dihedral angle between the planes OAB and OAD.
   (b) Determine the angle between the cables OA and OB.
This Contour Map is part of Section C and should only be used for the answering of the Geologic Geometry Option (Question C-1).