Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2014

Design & Communication Graphics
Higher Level
Section A (60 marks)

Wednesday, 18 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.
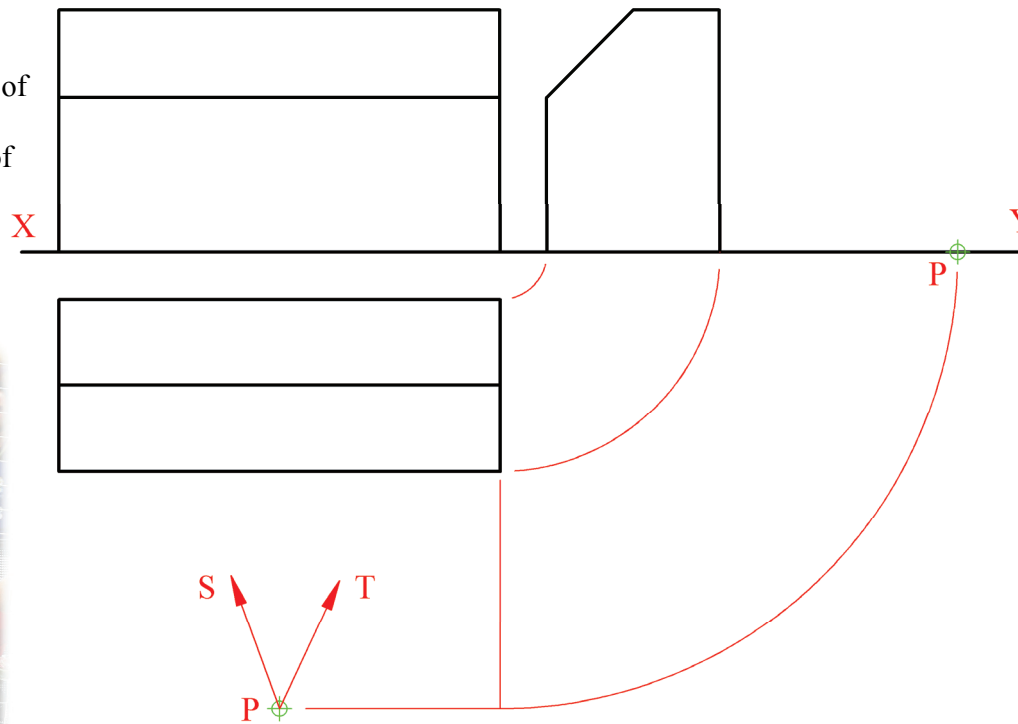
General Instructions:
- *Construction lines must be shown on all solutions.*
- *Write the question number distinctly on the answer paper in Sections B and C.*
- *Work on one side of the drawing paper only.*
- *All dimensions are given in metres or millimetres.*
- *Write your Examination number in the box below and on all other sheets used.*
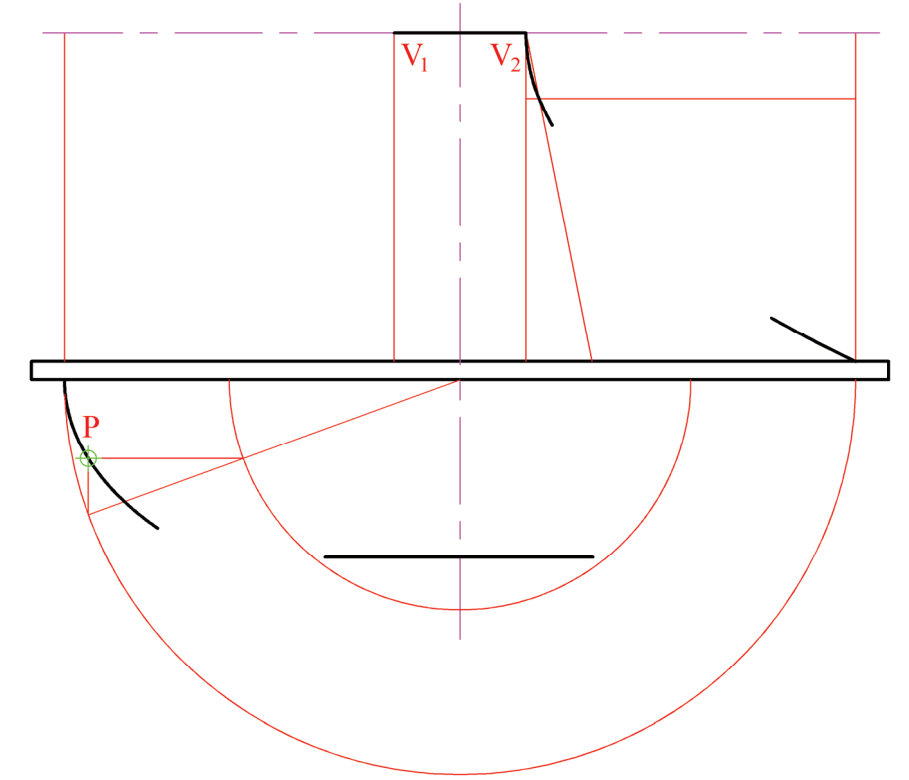
Examination Number:

A-1. The drawing shows the projections of a set of soccer goal posts. A ball is positioned at **P** for two penalty kicks during a World Cup match. The ball travels in a **straight line** and hits the net each time.

(a) The line **PS**, in plan, shows the start of the flight path of the ball for the 1st penalty kick. The ball crosses the goal line at a height that is halfway between the ground and the crossbar. Draw the projections of the **full** flight path.

(b) Similarly, the line **PT,** which makes an angle of 15° with the ground, shows the flight path of the ball for the 2nd penalty kick. Draw the projections of the **full** flight path.

X   Y

P

S   T

P

A-3. The 3D graphic below shows a *tagine*, which is a type of clay oven frequently used in North African cooking. The drawing on the right shows the incomplete elevation of the *tagine*. The upper "lid" is based on two semi-parabolas which are inscribed in rectangles and the lower dish is based on a semi-ellipse.

(a) V_1 and V_2 are the vertices of the semi-parabolas. **P** is a point on the semi-ellipse. Small portions of two of the curves have already been drawn. Complete the elevation of the *tagine*. Show clearly how the **exact** length of the base is obtained.
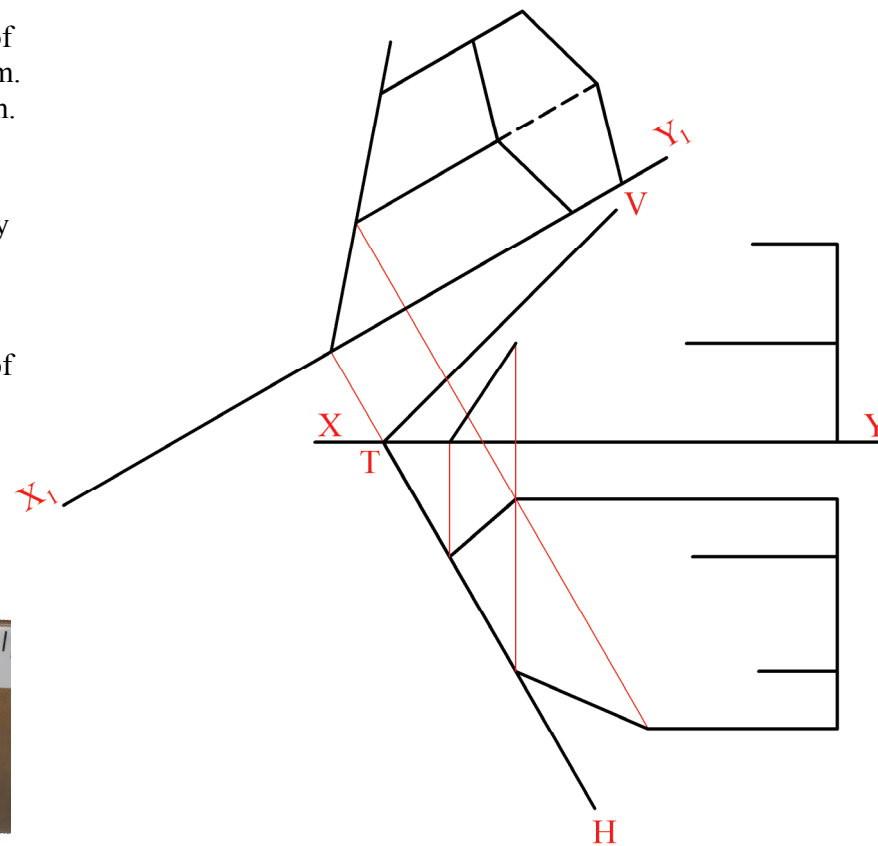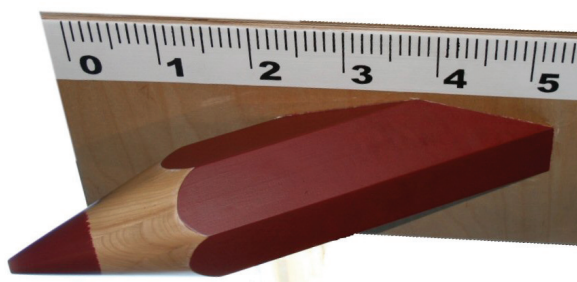
(b) Draw a tangent to the curve at the point **P**.

V_1 V_2

P

A-2. The 3D graphic below shows a piece of play equipment from a science museum. It includes a truncated hexagonal prism.

The drawing on the right shows the incomplete projections of a similar hexagonal prism which has been cut by the oblique plane **VTH**.
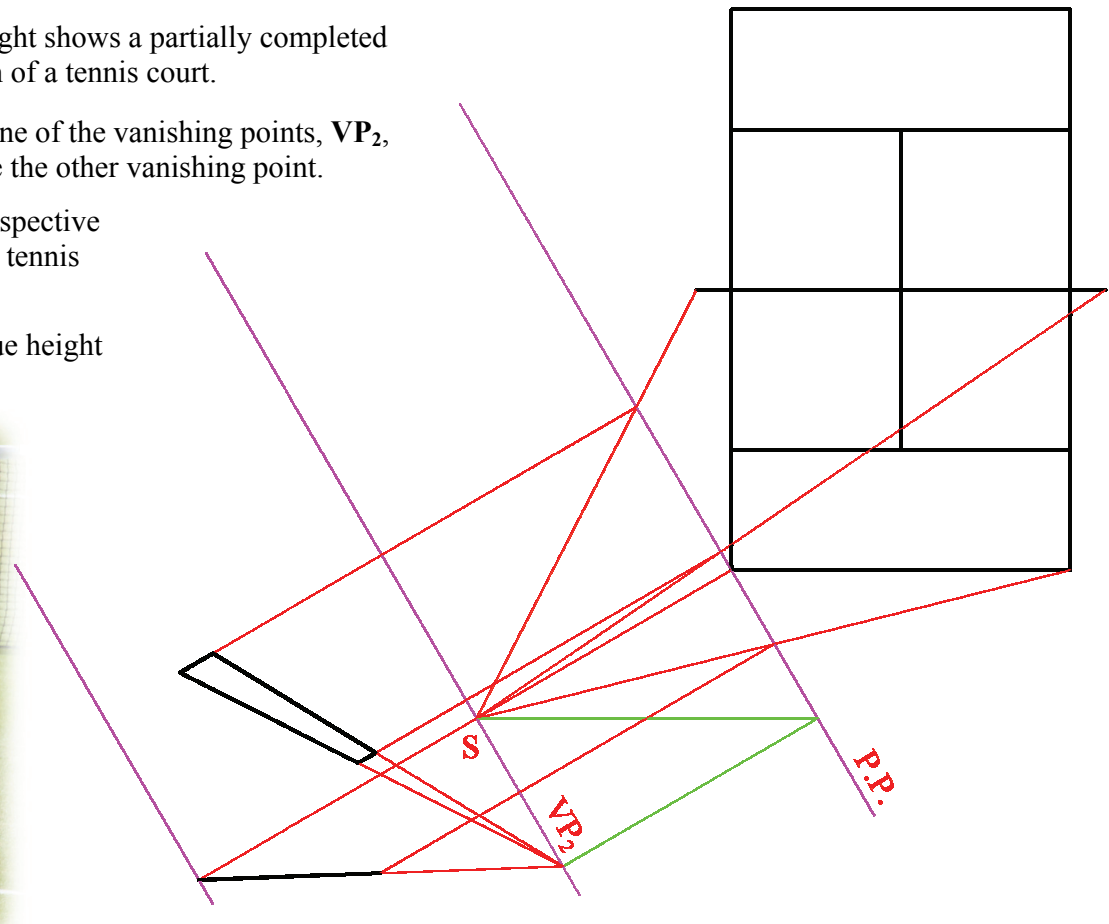
An auxiliary elevation is also given.

(a) Complete the plan and elevation of the cut prism.

(b) Determine the true shape of the cut surface.
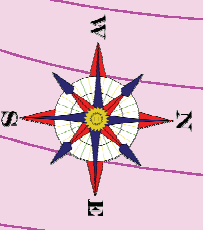
Y_1
V
X   Y
T
X_1
H

A-4. The drawing on the right shows a partially completed perspective projection of a tennis court.

(a) The position of one of the vanishing points, VP_2, is shown. Locate the other vanishing point.

(b) Complete the perspective projection of the tennis court and the net.

(c) Determine the true height of the net.

S
VP_2
P.P.

This Contour Map is part of Section C and should only be used for the answering of the Geologic Geometry Option (Question C-1).

(Scale 1:1000)