2020. M81A

2020L562A1EL

Coimisiún na Scrúduithe Stáit

State Examinations Commission

Leaving Certificate Examination, 2020

Design & Communication Graphics

Higher Level

Section A (60 marks)

Centre No.

3 Hours

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.*

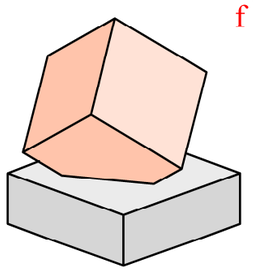
Examination Number

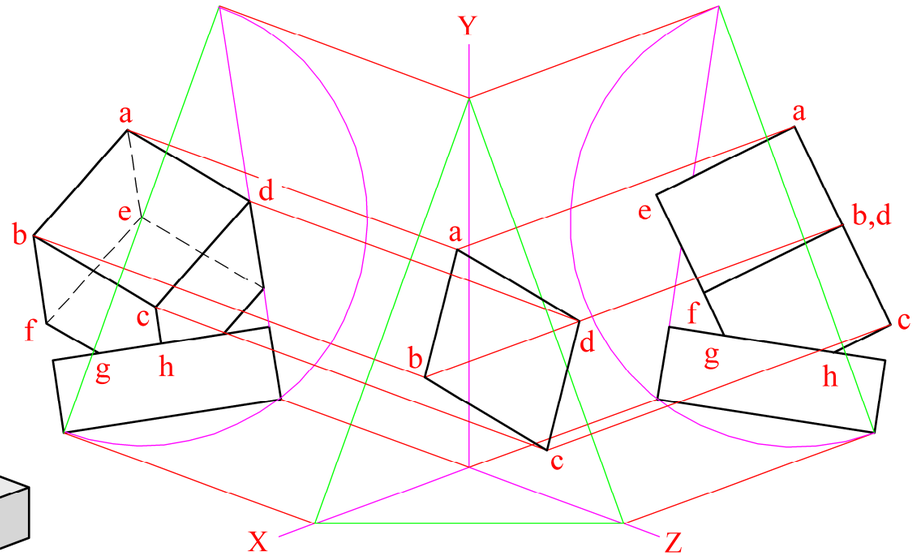
SECTION A - Core - Answer **any three** of the questions on this A3 sheet.

A-1. The image below shows a paperweight. It consists of a cube and a square prism which intersect each other. The drawing shows an incomplete dimetric projection of the papeweight. A pictorial view is also shown.

(a) Complete the dimetric projection of the paper weight.

(b) Determine, and indicate in degrees, the true angle between the surface **abcd** and the horizontal plane.

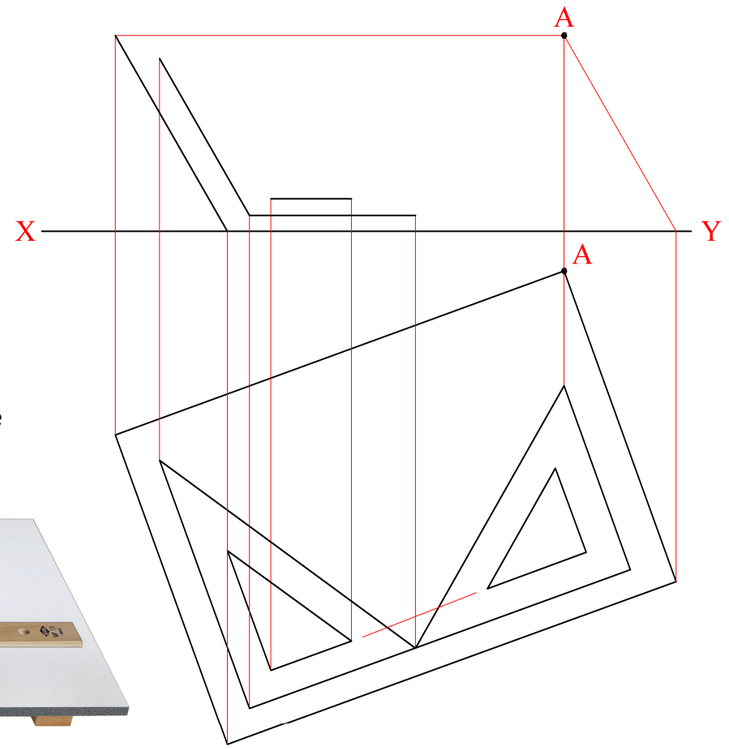




A-2. The image below shows a drawing board and two set squares. The drawing on the right shows the plan and incomplete elevation of a similar drawing board with a 30°/60° set square and also a 45° set square.

(a) Complete the elevation of the drawing board and the two set squares.

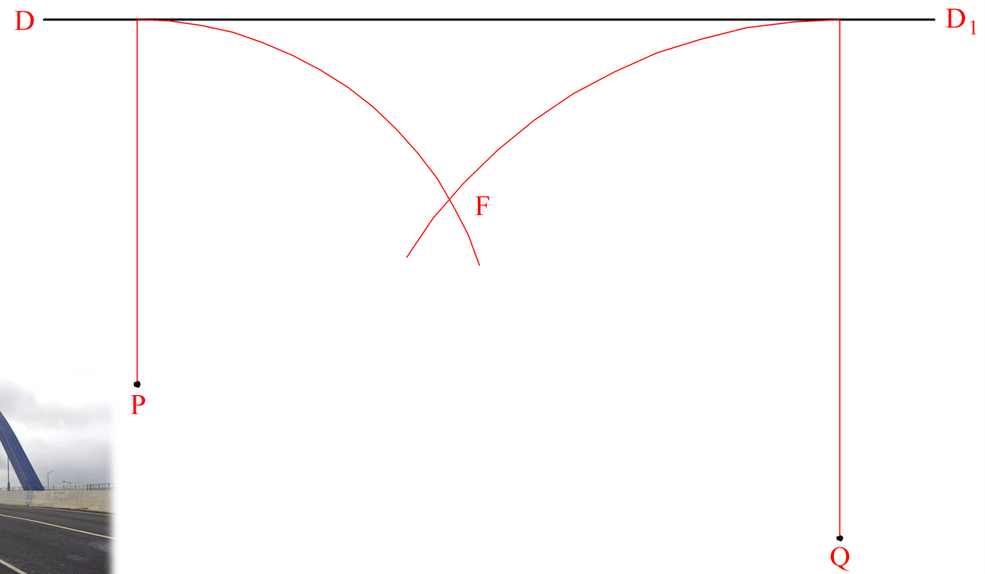
(b) A line from point **A** is drawn on the surface of the board. The line has a true length of 50mm and makes a true angle of 45° with the bottom edge of the board. Draw the projections of this line.



A-3. The image below shows a parabolic bridge at the M50 interchange in Dublin.
The drawing shows the directrix **DD$_1$** the focus **F** and two points **P** and **Q** on a similar parabola.

(a) Locate the axis and the vertex and draw a portion of the parabolic curve which shall pass though **P** and **Q**.

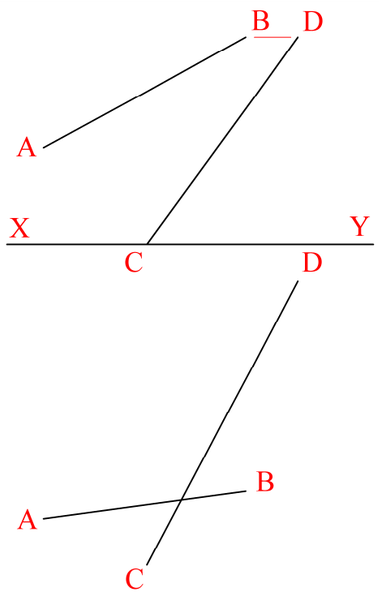
(b) Construct a normal to the curve at the point **P**.



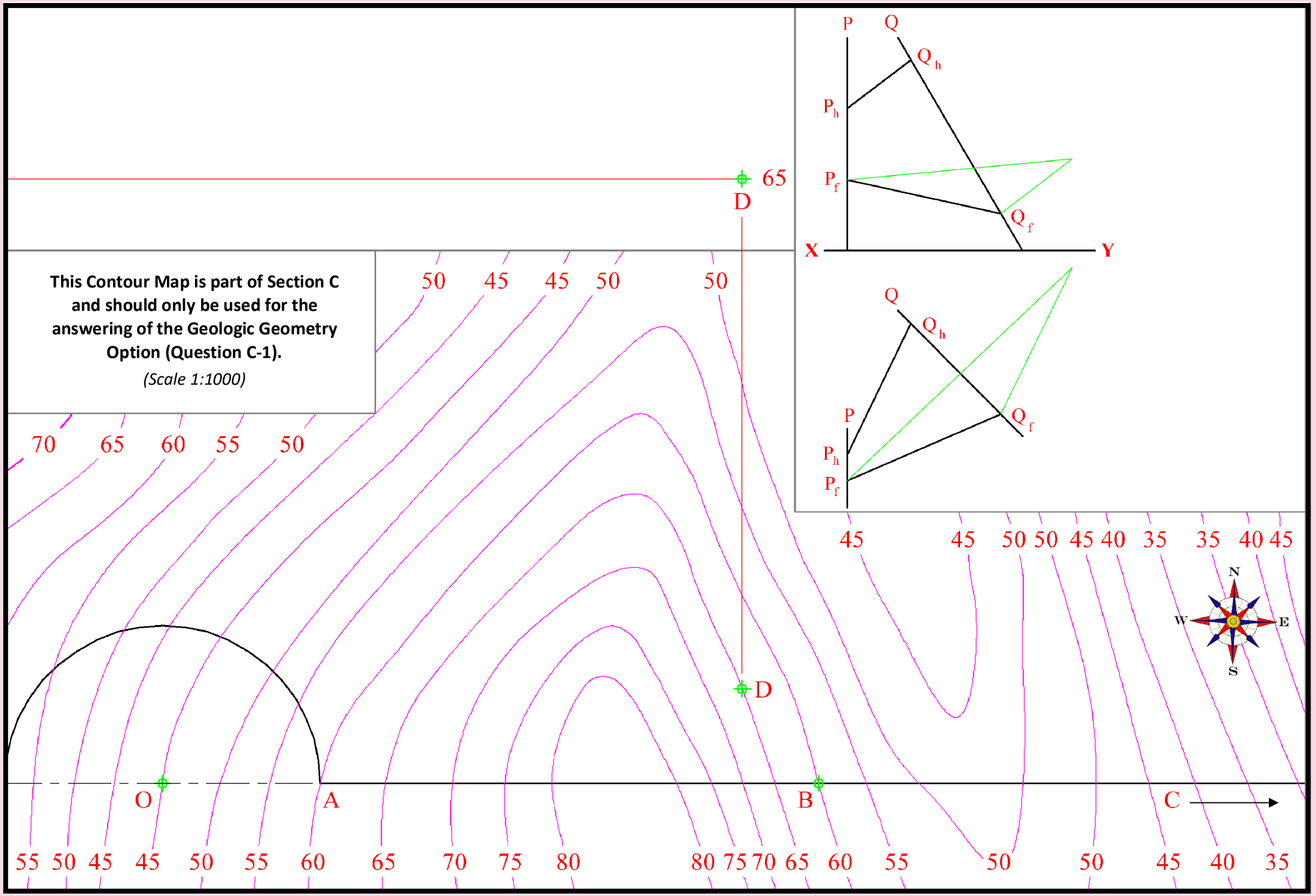
A-4. The image below shows a fragrance bottle and diffuser reeds.
The given elevation and plan show two similar reeds represented by the skew lines **AB** and **CD**.

(a) Determine the projections of the shortest horizontal line between the skew lines.

(b) Determine the true length of a line joining **A** to **C**.



This examination paper must be returned at the end of the examination – You must include your Examination Number on the front cover.


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)
P
Q
Q_h
P_h
P_f
Q_f
X
Y
65
D
50 45 45 50 50
70 65 60 55 50
45 45 50 50 45 40 35 35 40 45
N
W
E
S
D
O
A
B
C
55 50 45 45 50 55 60 65 70 75 80 80 75 70 65 60 55 50 50 45 40 35