Junior Certificate Examination, 2010

Technical Graphics
Ordinary Level
Section A
(120 marks)

Monday, 21 June
Morning 9:30 - 12:00

Instructions

(a) Answer any ten questions in the spaces provided. All questions carry equal marks.

(b) Construction lines must be clearly shown.

(c) All measurements are in millimetres.

(d) This booklet must be handed up at the end of the examination.

(e) Write your examination number in the box provided below and on all other pages used.

Examination Number: 

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1. Shown is an incomplete elevation, the plan and end view of a calculator. Also shown is a 3D graphic of the calculator. **Insert** the missing lines in the elevation.

2. In the space provided, make a freehand sketch of the sports bottle shown. Colour or shade the completed sketch.

3. Name the computer device shown and state its use.

Name: ________________________ Use: ________________________

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4 Draw a line from C which will divide the area of the triangle ABC into two equal parts.

5 Fig. 1 shows the design of a clock based on an ellipse and a circle. In Fig. 2, F and F1 are the focal points of the ellipse. The lines LM and LN are tangents to the ellipse.

Locate point N and complete Fig. 2 by drawing the tangents LM and LN.

6 The outline of a lens from a pair of reading glasses is shown on the grid below. Also shown is a 3D graphic of the reading glasses. Write down the area of the lens in square units.

Area of lens: __________ square units

1 square = 1 square unit
7. The figure shows a set of blocks. Draw, in the space provided, an elevation of the blocks in the direction of the arrow.

8. Using the scale provided, **measure** and **write down** the dimensions A and B of the fireplace shown.

   A: ______________

   B: ______________

9. Shown is the elevation, plan and incomplete isometric view of an USB drive. Complete the given sketch of the USB drive on the grid provided. Colour or shade the completed sketch.
10 List the CAD commands used to produce the figures A to B and B to C.

CAD Commands: A → B ______________ B → C ______________

11 The diagram shows the outline of a key. Also shown is a 3D graphic of the key. The handgrip is based on a regular hexagon. Complete the regular hexagon.

12 Project the shadow cast by the letter H when the direction of light is parallel to the arrow.
13 **Fig. 1** shows a logo for a card shop. **Fig. 2** shows the incomplete logo.

Complete the logo in **Fig. 2** showing clearly how to locate the centre of the circle.

![Fig. 1](image1)

![Fig. 2](image2)

14 The figure shows an *incomplete* perspective drawing of a writing unit. A small 3D graphic of the unit is also shown. **Complete** the perspective drawing.

![Diagram of writing unit](image3)

15 The diagram shows the fuel gauge of a car.

**Rotate** the needle about its centre to show when the fuel tank is half full.

![Fuel gauge](image4)
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