Coimisiún na Scrúduithe Stáit
State Examinations Commission

S61B

Junior Certificate Examination 2004

Technical Graphics

Higher Level

Section B (280 marks)

Monday 21 June
Afternoon 2:00 - 5:00

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 paper only.*

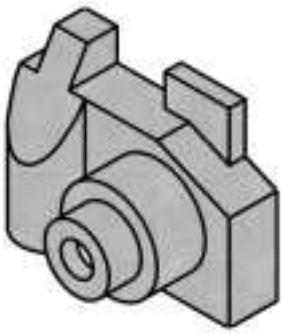
(d) Write your Examination Number on each sheet of paper used.

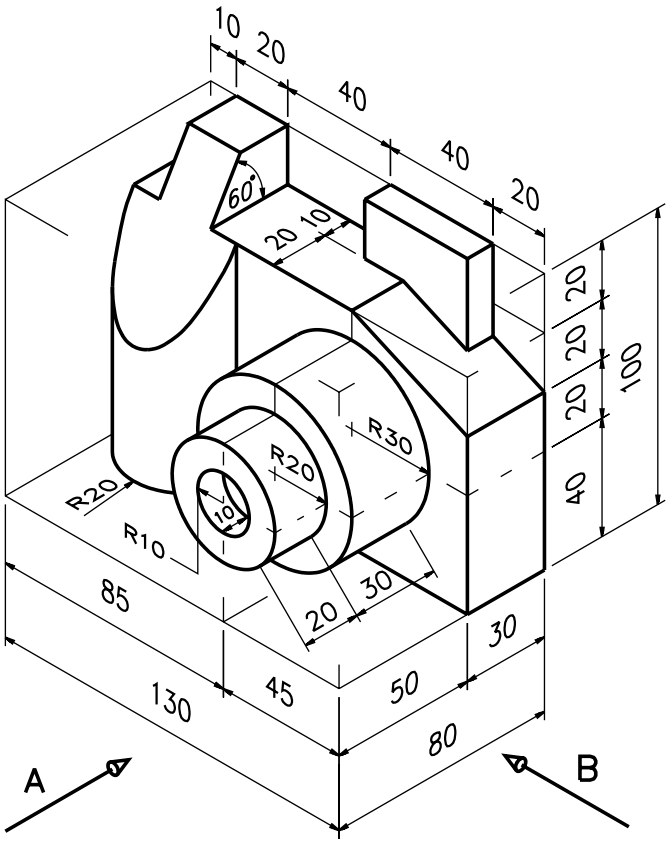
1. A pictorial view of a digital camera is shown.

(a) Draw an elevation looking in the direction of the arrow A.

(b) Draw an end view looking in the direction of the arrow B.

(c) Draw a plan projected from (a) above.

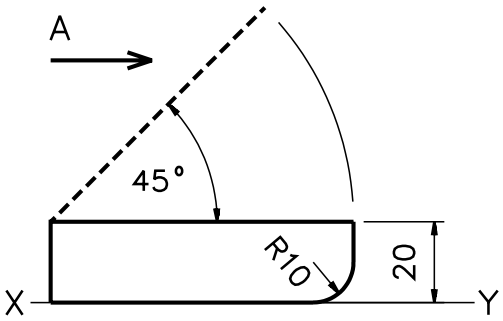




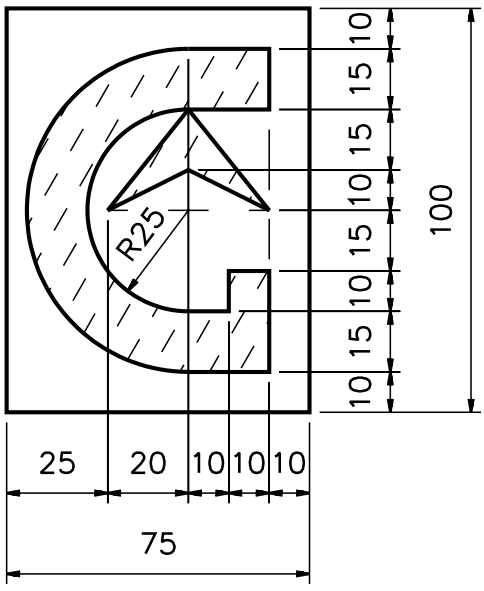
2. The elevation and plan of a laptop computer are shown.

The cover of the laptop computer contains a logo as shown in the plan.

(a) Draw the given elevation and plan.



(b) Project an end elevation in the direction of arrow A to show the cover of the laptop computer in the open position, as indicated by the broken line in elevation.



3. The figure shows the axonometric axes required for the isometric projection of a table lamp.

The side elevation and plan are shown in their required positions.

(a) (i) Draw the axonometric axes X, Y and Z.

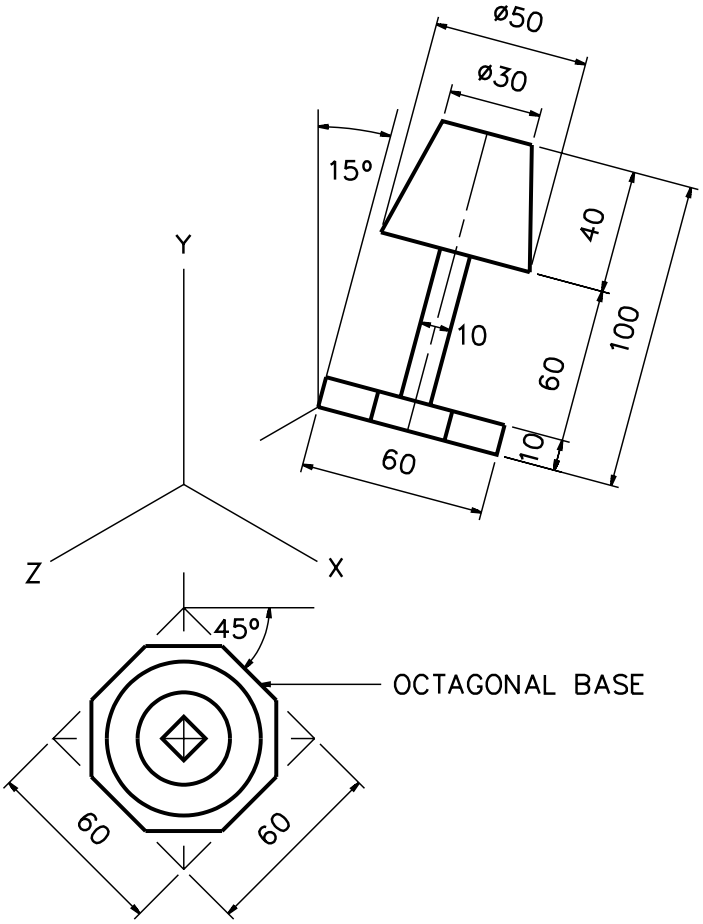
(ii) Draw the plan orientated at 45º as shown.

(iii) Draw the side elevation orientated at 15º as shown.

(iv) Draw the completed axonometric projection of the table lamp.

OR

(b) Draw the completed isometric projection of the table lamp using the isometric scale method.

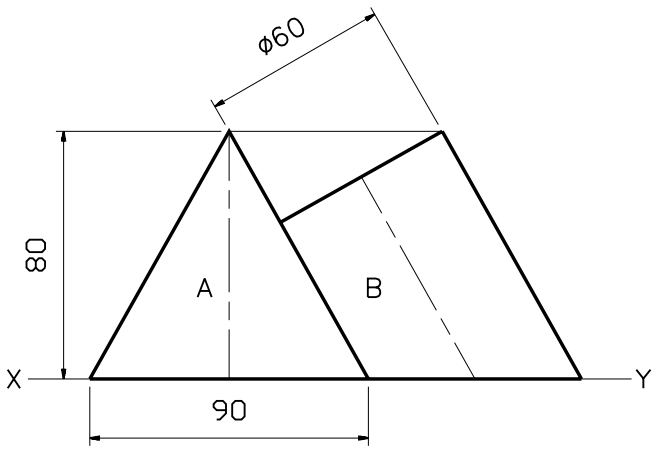


4. The figure shows the elevation of a sculpture based on a cone A and a truncated cylinder B.

The cone and cylinder are in contact with each other.

(a) Draw the given elevation and project a plan.

(b) Draw the development of the **curved surface** of the truncated cylinder.



5. The figure shown is based on a square and an equilateral triangle.

The figure is subjected to transformations in the following order:-

(i) Central symmetry.

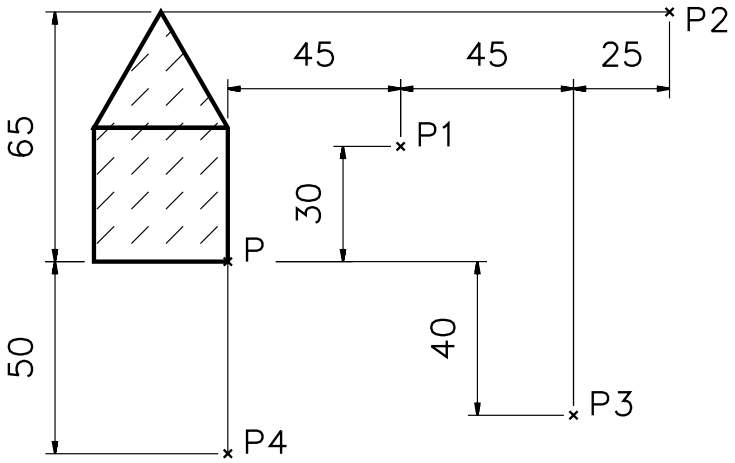
(ii) Axial symmetry.

(iii) Translaton.

(iv) Rotation clockwise through 120º.

P1, P2, P3 and P4 show the positions of the corner P under these transformations.

Draw the given figure and determine the image figures in each of the transformations.



6. The figure shows a design for an monument.

A pictorial sketch of the monument is also shown.

The curve ABC is a parabola with vertex B. The curve PQRST is a semi-ellipse with minor axis 80. Normals to the elliptical curve are drawn at points Q and S.

Draw the given design.

Show clearly the constructions necessary to determine the major axis of the ellipse and the normals at Q and S.