735/1
TECHNICAL DRAWING/GEOMETRICAL DRAWING
Uganda Certificate of Education
PAPER 1
2010
3 Hours

INSTRUCTIONS TO CANDIDATES

This question paper consists of two sections, A and B.

Answer four questions, taking at least two questions from each section.

All questions carry equal marks.

Drawings are not to scale.

Unless otherwise stated in the question, strictly geometrical methods must be used. Lines which are parallel, perpendicular or inclined at angles of 30^0, 45^0, 60^0, to other lines may be drawn with out showing constructional lines.

*All dimensions of the figures are in millimeters.*

Unless otherwise stated, solutions are to be drawn full size.

*No dimensions are required on any solution unless specifically stated.*

Write your name and examination index number at the bottom right hand corner of your paper.

SECTION A-PLANE GEOMETRY (50 MARKS)

1. The figure below shows the shape of a small plot of land taken in metres.
   a. Draw the plot to a scale of 1:100.
   b. By construction, reduce the plot to a triangular one of equal area.
   c. Inscribe a circle into the triangular plot.
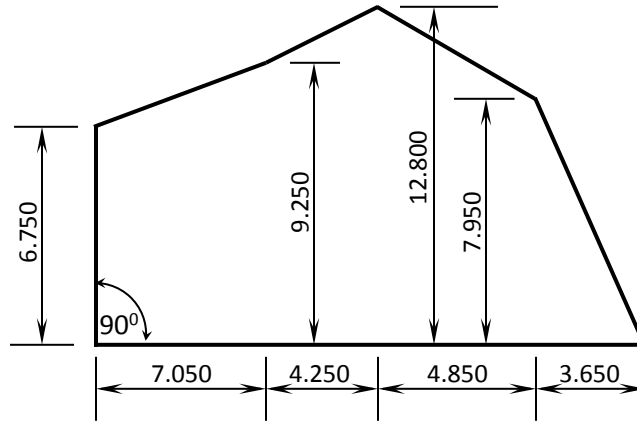
2. In the figure below is a cone mounted on to a cylinder. Point **P** uniformly moves around and along the surfaces of the solids until it gets to the apex of the cone. Construct the **right hand** locus of the point if it gets to the apex in one revolution. Name the loci obtained.
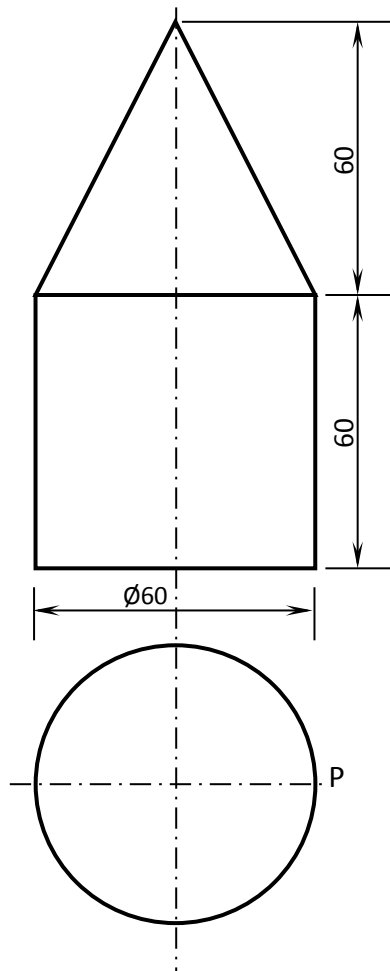
3. The figure below shows the cross-section of a water jug. Draw the given figure clearly showing how the centres of the various arcs are obtained.
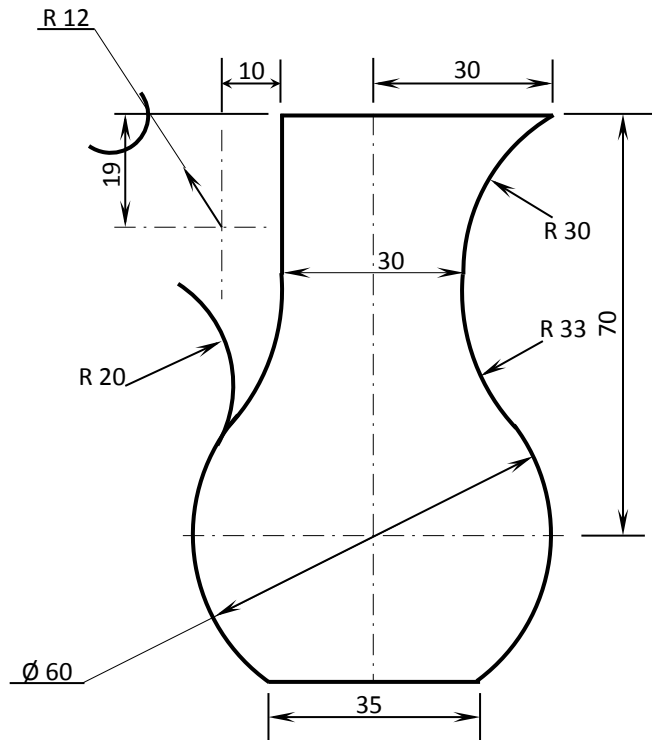

4. a. By construction, determine the diameter of a circle whose circumference is 135mm.
    b. Use the information given on the diagram below to construct a parabola, its tangent and normal any point on the curve other than the vertex.
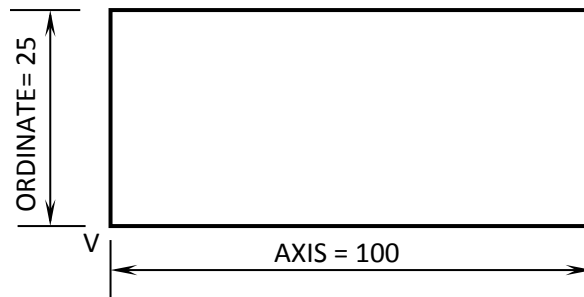

**SECTION B-SOLID GEOMETRY (50 MARKS)**

5. a. Construct an auxiliary view of the component given in the figure below on ground line X¹Y¹.
    a. Name the auxiliary view obtained above.
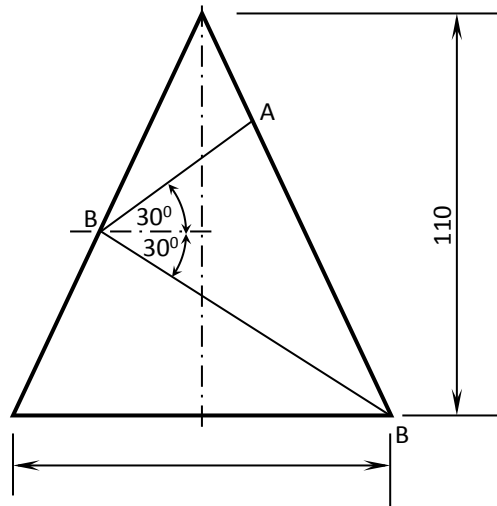
Ø 36

X²

45⁰

X ——— Y
Y¹

40

5

25

65
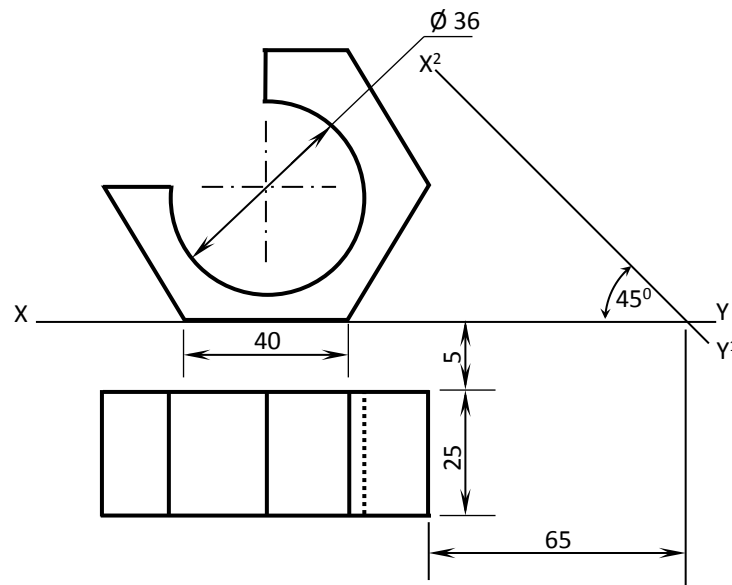
6. The plan and part elevation of a quadrilateral ABCD are given in the figure below.
   a. Draw the complete elevation and plan.
   b. Determine the true shape of the quadrilateral.

c¹

d¹

b¹

65

40

40   50

25

X

12

c

45⁰   60⁰

b

d

60⁰

45⁰

a
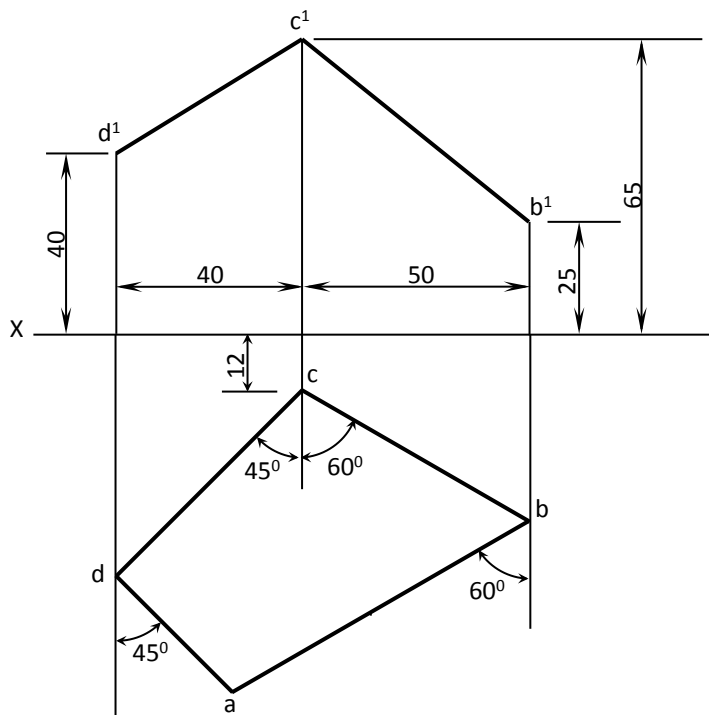
7. Two elevations of a solid are shown below. Draw, using cavalier projection, the oblique view of the solid in which faces A and B are completely visible where face B is perpendicular to the viewer. Show all the hidden edges.

Ø 60   25

15

A
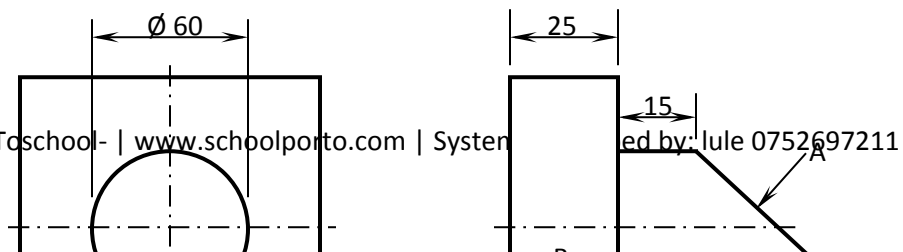
8. A <u>hollow</u> right circular cone of height 110 mm and base circle diameter 90 mm is cut by two planes AB and BB as shown in the figure below. Study the drawing very carefully and draw;
   a. The given view.
   b. The complete plan view of the frustum
   c. The development of the frustum making P the joint.

END