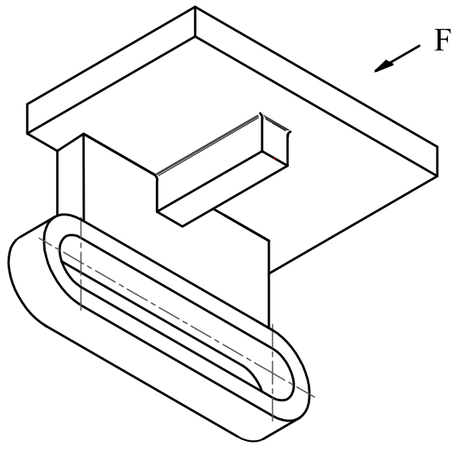
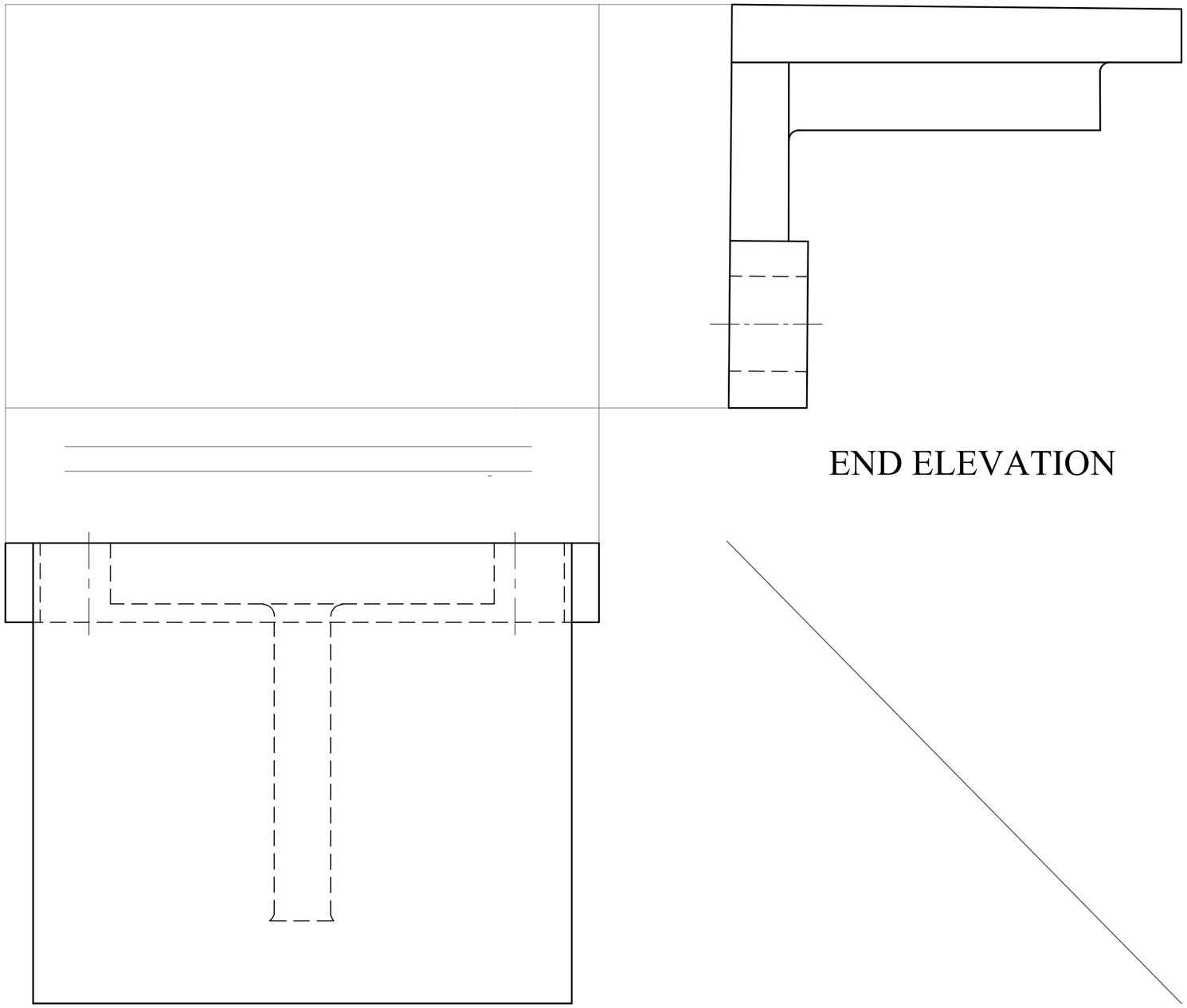
1. A pictorial illustration, an End Elevation and a Plan of a Tool Grinding Rest are given.
   a. In first angle orthographic projection, project a Front Elevation as indicated by the arrow F.
   b. Label the Front Elevation in block letters.
   c. Draw the symbol of projection on the given centre-line.

14 marks



SYMBOL OF PROJECTION

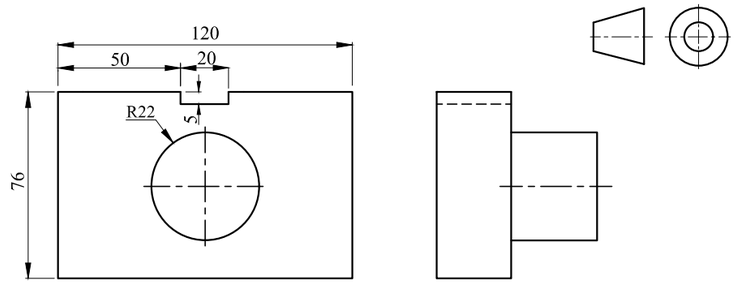


END ELEVATION

PLAN

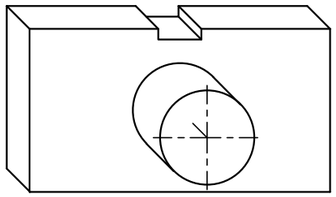
4. Orthographic views and an oblique projection of a photo camera are given.
On the given start lines and to the given dimensions, draw an isometric projection of the camera.
Note: The camera fits exactly in the given crate.

14 marks

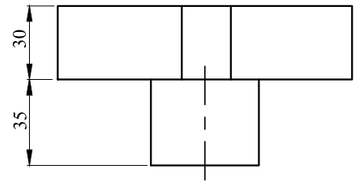


FRONT VIEW

END VIEW



OBLIQUE PROJECTION

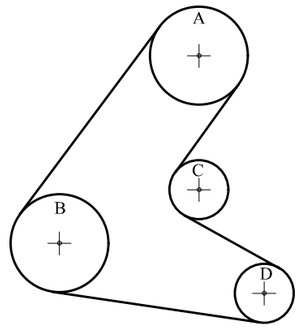


PLAN

ISOMETRIC PROJECTION

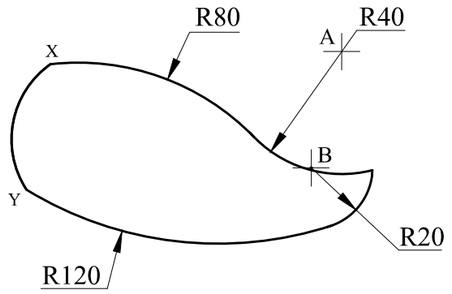
5. A nylon belt is fitted over four pulleys as shown.
Pulley A and pulley B have the same diameter while pulley C and pulley D are also of the same diameter.
Complete the drawing given below by constructing:
a. a common (external) tangent between pulleys A and B and
b. a transverse (internal) tangent between pulleys C and D.

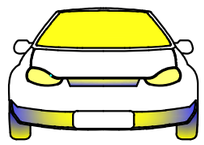
12 marks



2. A detailed drawing of a car headlamp is given below.
Using the given start lines and dimensions, draw the headlamp showing clearly the construction to obtain the centres of the arcs.
Show points of tangency.

12 marks

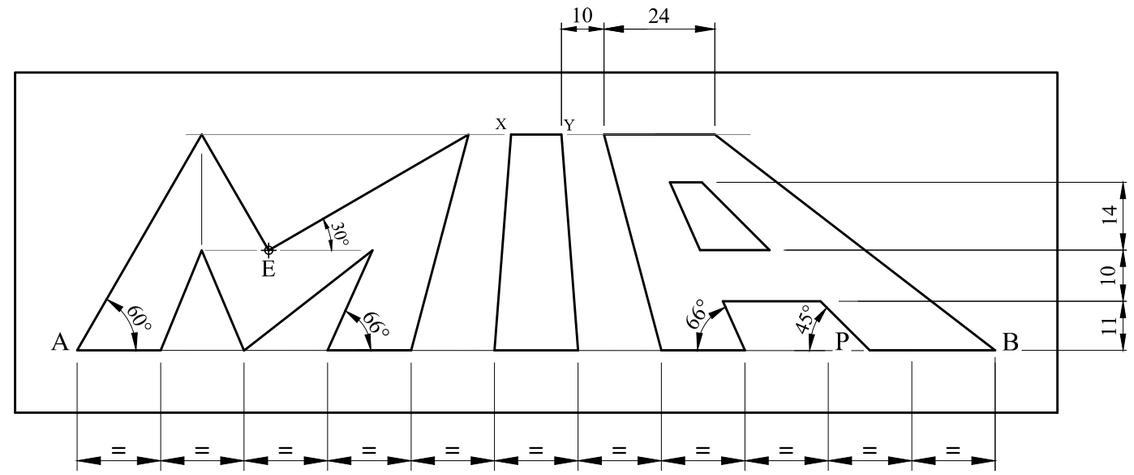


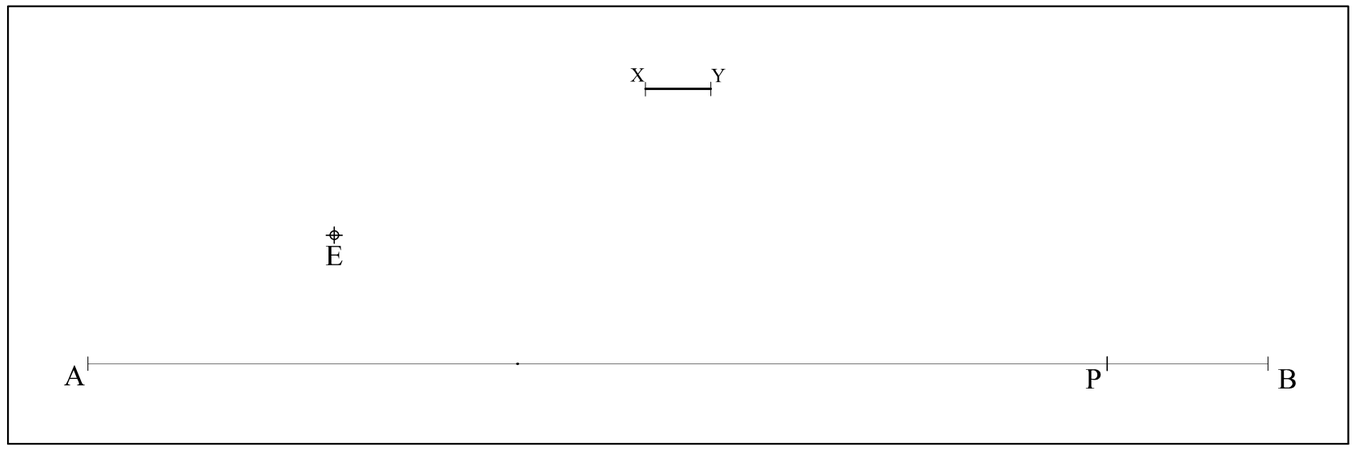


3. The sign of a beauty salon, named after its owner, is shown at the side.
Details of the sign are given below.
On the start line AB shown at the bottom, draw the sign to the given dimensions.

Notes: a. *Start by dividing line AB into 11 equal divisions by construction.*
b. *The 60° angle at A, the 30° angle at E and the 45° angle at P must be constructed using the compass.*
c. *Use the protractor for the remaining angles.*

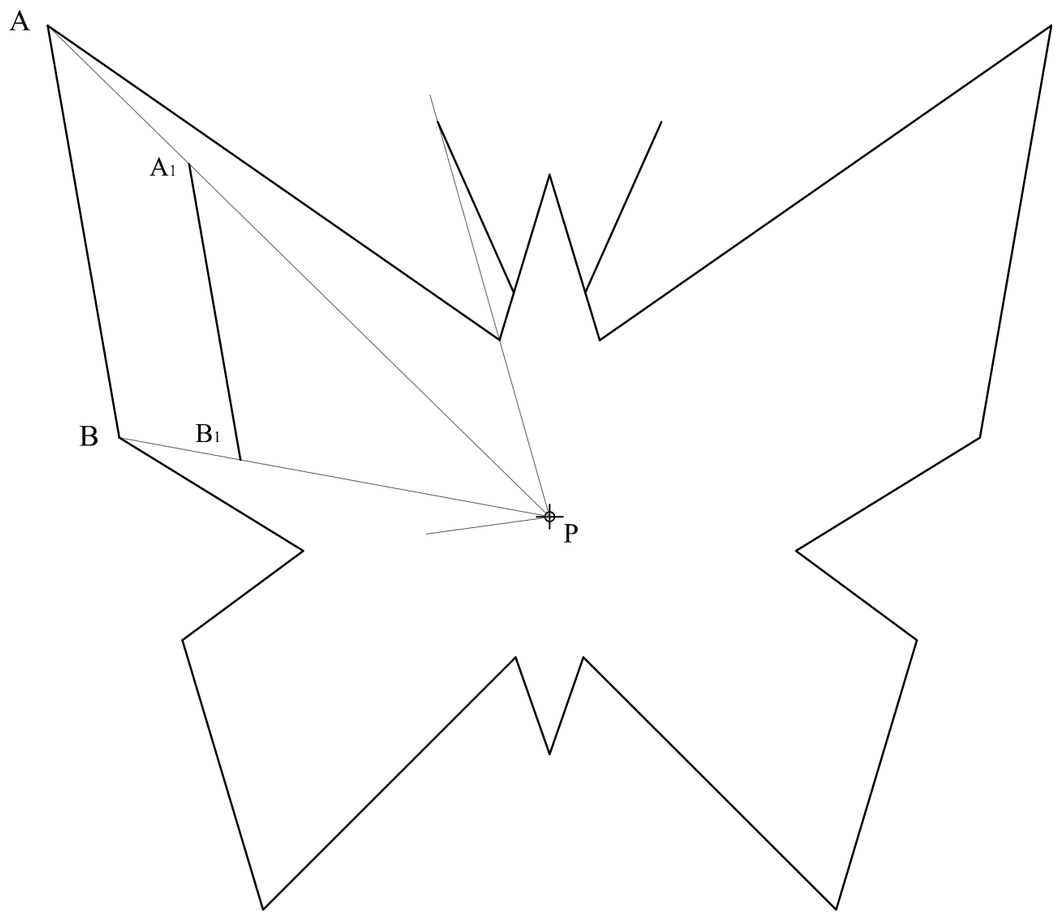
18 marks





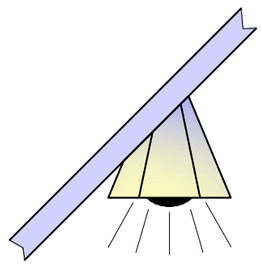
6. A simplified drawing of a butterfly is given. Line AB is geometrically reduced to A_1B_1.
Complete the construction to reduce the butterfly using point P as the pole.

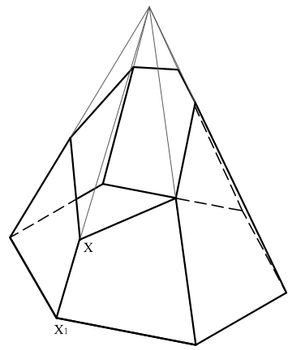
12 marks



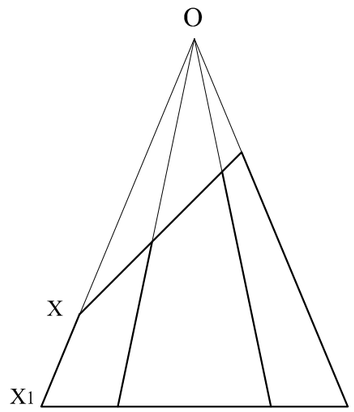
7. An industrial lamp-shade is fixed to the inside of a slanting ceiling.
The shade has the shape of a truncated hexagonal pyramid which is shown in the pictorial view.
A Front Elevation and an incomplete Plan of the shade are given below.
a. Complete the Plan.
b. Construct the Development, using the given centre O_1.
Note: Make the joint line along XX_1.

18 marks



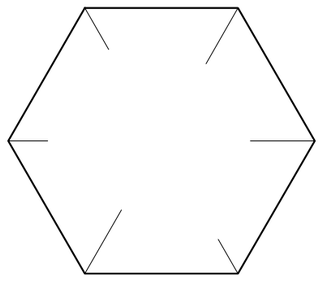


PICTORIAL VIEW



FRONT ELEVATION

DEVELOPMENT



PLAN