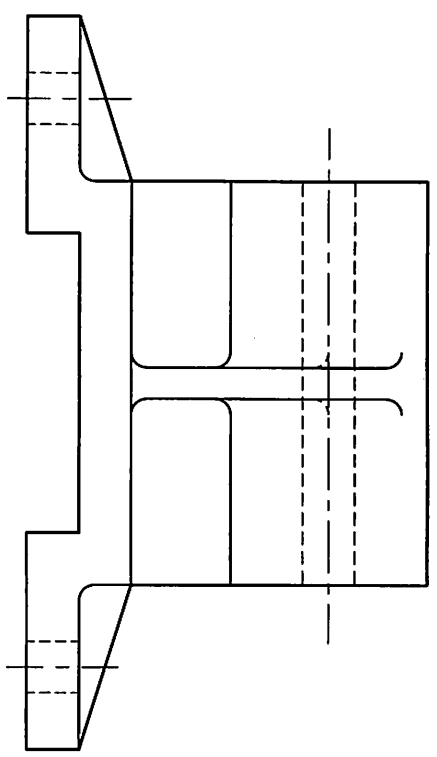
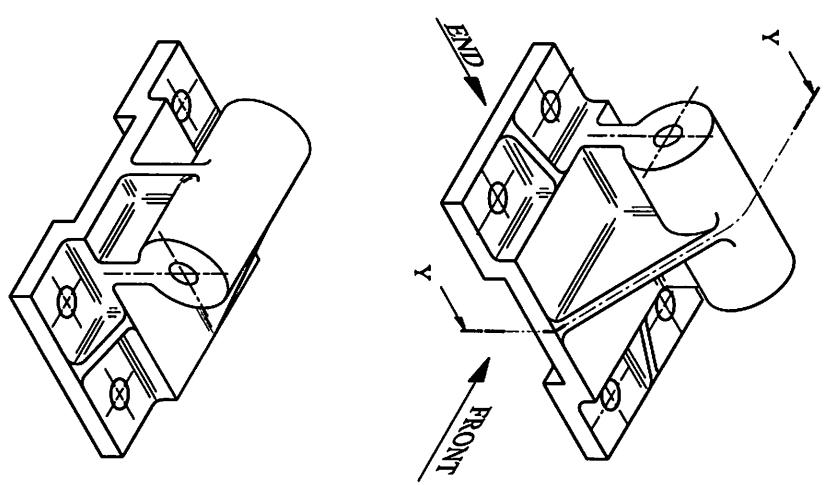


Question 1. Two pictorial views and two orthographic elevations of a CAST STEEL BRACKET are given. In the space provided:

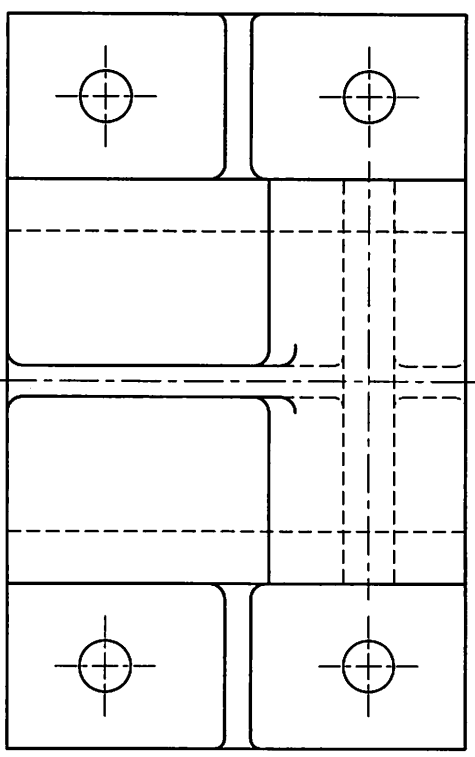
- a) draw a sectional end elevation Y-Y
- b) draw the symbol of the projection used

25 marks



FRONT ELEVATION

SECTIONAL END ELEV Y-Y



PLAN

Projection symbol

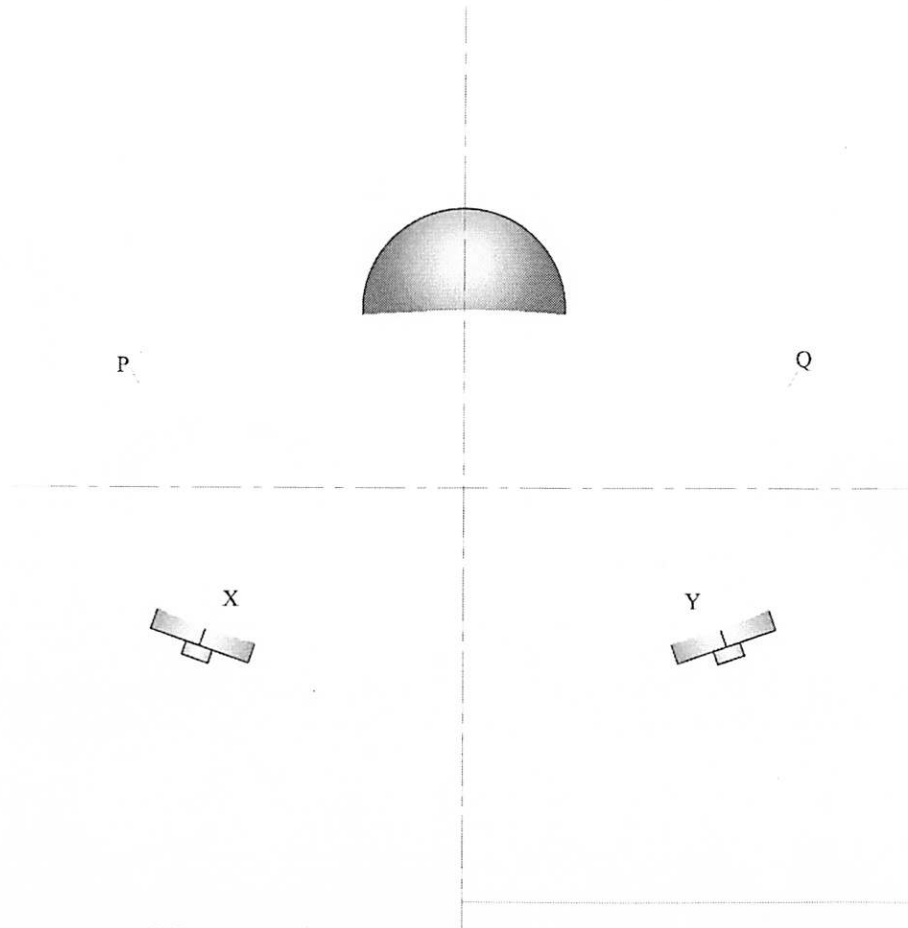
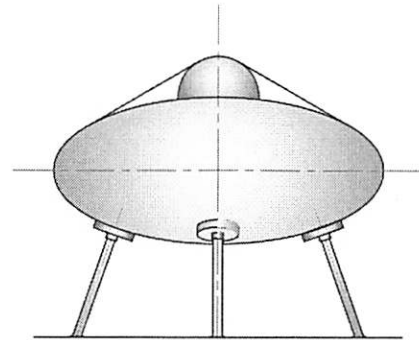
Sheet 1 of 4

Question 2. The toy spacecraft shown consists of a spheroid which has an elliptical cross section. The landing gear consists of four supports which are normals to the ellipse.

On the given start lines:

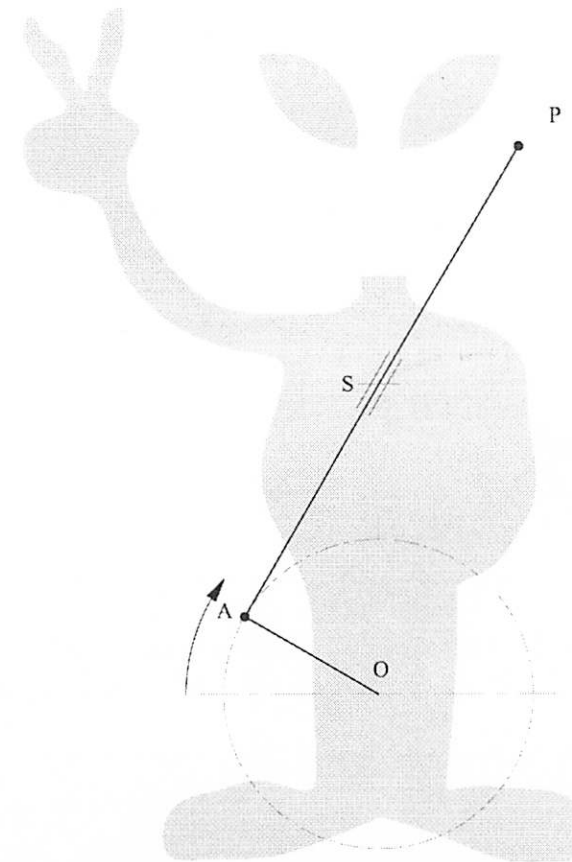
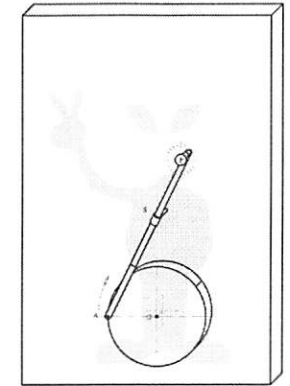
- construct the ellipse having a major axis of 160mm and a minor axis of 70mm,
- construct two normals from points X and Y on the ellipse to represent the centre lines of two supports.
- construct two tangents at points P and Q to form part of the cabin.

15 marks



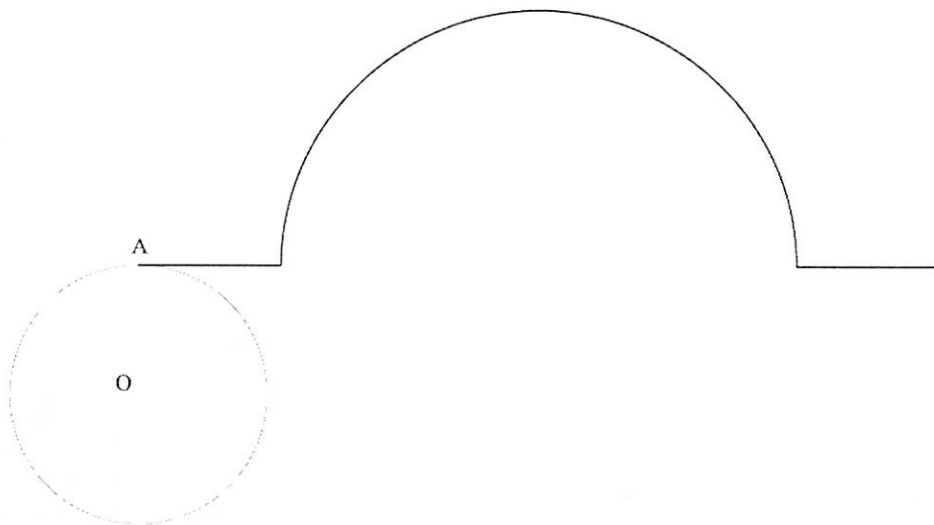
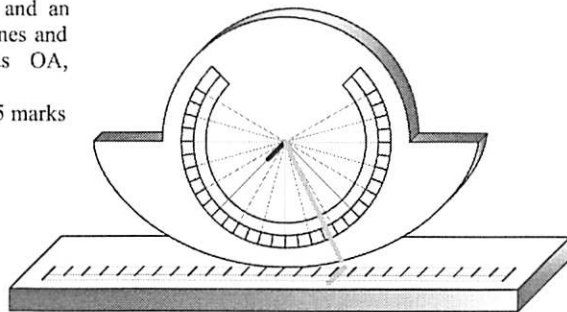
Question 3. The figure on the right shows a simple mechanism built by students to participate in the school annual exhibition. The mechanism, which is mounted on a board, consists of a disc which rotates about centre O. Link AP, pin jointed to the disk at A, slides through the swivel S. A light bulb is attached at point P. Plot the locus of point P for one revolution of the disc.

15 marks



Question 4. The figure shows a model of a CYCLOID POLAR SUNDIAL, the profile of which is composed of a semi-circle and an inverted cycloid. On the given start lines and using the generating circle radius OA, construct the inverted cycloid.

15 marks

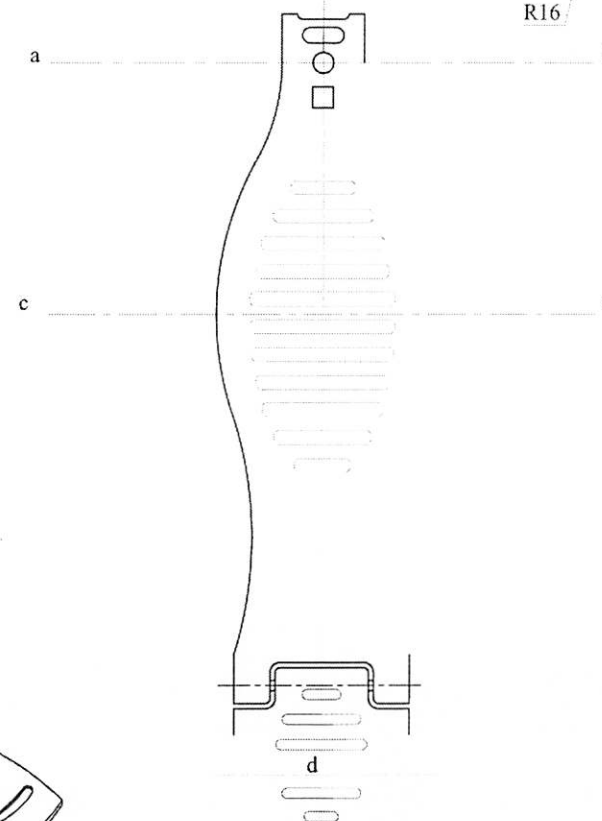
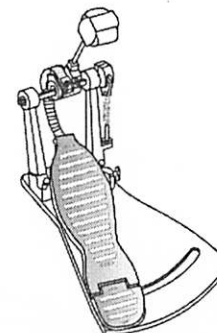
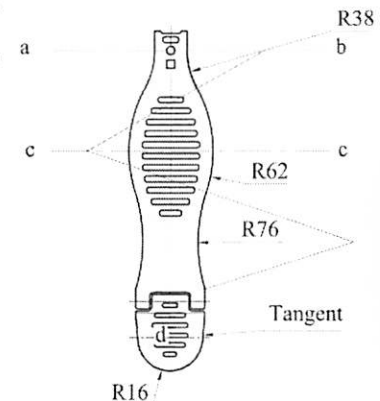


Question 5. A pictorial sketch and a plan view of a single bass drum PEDAL are shown. On the given start lines below, draw the remaining part of the profile and show clearly the constructions used to locate the centres and tangential points.

Notes:

- The centre of arc R38 lies on centre line *ab*.
- The centre of arc R62 lies on centre line *cc*.
- Point *d* is the centre of R16 arc.
- Show construction used to locate tangential point to arc R16.

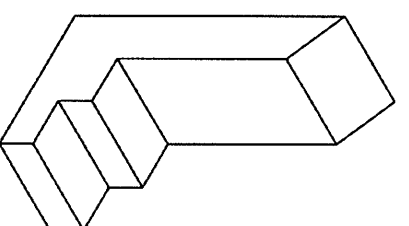
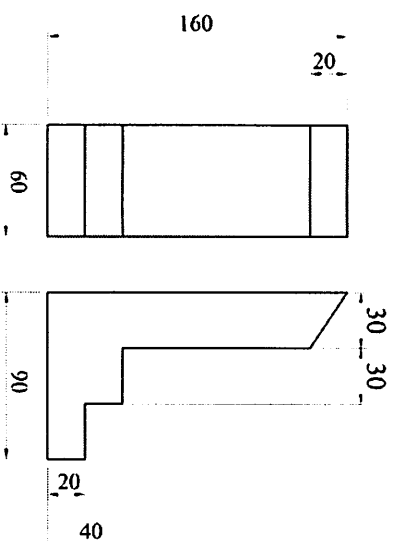
15 marks



Sheet 3 of 4

Question 6. An isometric view and an orthographic projection of a Podium (elevated platform used for public speaking) are given. Using the given measurements and start lines, draw a two point estimated perspective view of the podium.

*Note: The orientation is to be similar to that in the isometric view.*  
1.5 marks



VP 1

VP 2



Sheet 4 of 4