

INDIAN INSTITUTE OF TECHNOLOGY PATNA
CE 111: Engineering Drawing
Mid Semester Examination

Maximum Time: 120 Minutes

Maximum Marks: 50

Instructions

- Read the questions carefully before answering.
- Drawing should be only on one side of the page.
- All students should bring their own drawing equipments.
- Numbers in the parenthesis at the end of each question indicate maximum marks.
- All dimensions are in **mm** (unless specified otherwise).
- Solution of each question should be demarked by thick continuous lines.
- First sheets should have border line, standard sized title block. Write your name and roll number and other details clearly in it.
- All sheets should have border line.
- Students may use more than one sheet only if necessary.
- Answer the questions on the provided drawing sheet itself.

Questions

1. Draw an Ellipse using the method of eccentricity and directrix. Take distance of focus from the directrix equal to 60 mm and eccentricity ratio for the ellipse $\frac{2}{3}$. **(10)**
2. A line PQ contains a point O on it such that the ratio of the distance of the PO: OQ is 1:2. The end P is 20 mm above H.P. and it is in 1st quadrant. And the other end Q is in V.P. The point O is 35 mm above H.P. The line is inclined with the H.P. at an angle 30° . The elevation length of the line PQ is 70 mm. Draw the projections of the line PQ. **(15)**
3. Draw a cycloid of any points on the circumference of the circle of diameter 55 mm rolling on a horizontal plane. **(10)**
4. Draw the projections of a regular heptagon of side 35 mm such that one side of the heptagon lies on the HP and the plane of the heptagon makes an angle of 60° with the HP and 30° to the VP. **(15)**