

# Agnihotri Engineering & GATE Classes

Scripting success stories

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## CONIC SECTION

### Ellipse

- Q.1) Construct an ellipse by oblong method when major axis is 150 mm & minor axis is 100 mm long ?
- Q.2) Inscribe an ellipse in a parallelogram having sides 150 mm & 100 mm long & included an angle of  $120^\circ$  ?
- Q.3) Construct an ellipse by concentric circle method when major axis is 120 mm & minor axis is 80 mm .
- Q.4) Construct an ellipse by arc of circle method when major axis is 150 mm & minor axis is 100 mm long. Also draw normal & tangent to ellipse at 30 mm from major axis ?
- Q.5) Two fixed points  $F_1$  &  $F_2$  are 100 mm apart. Trace the complete path of point 'p' moving in a plane in such a way that the sum its distances from two fixed point is always the same & is equal to 130 mm . Name the curve?
- Q.6) In a triangle ABC,  $AB = 100$  mm ,  $BC = 55$  mm &  $AC = 75$  MM. Draw an ellipse such that A & B act as focus & C is a point on the curve?
- Q.7) The foci of an ellipse are 90 mm apart & minor axis is 65 mm long .Draw the upper half of the ellipse by concentric circle method & lower half by oblong method & also determine the length of major axis?

### Parabola

- Q.8) Construct a parabola by general method when distance of focus from directrix is 60mm &  $e = 1$  ?
- Q.9) A fixed point is 75 mm from fixed straight line. Draw the locus of point P moving in such a way that its distance from the fixed straight line is equal to its distance from the fixed point. Name the curve?
- Q.10) Construct a parabola by rectangle method when base  $AB = 80$  mm & axis  $CD = 100$  mm ?
- Q.11) A ball is thrown up in the air & reaches the maximum height of 160 mm & travels a horizontal distance of 120 meters . Trace the path of the ball assume it to be parabolic & use proper scale?
- Q.12) A ball is thrown up in the air & reaches the maximum height of 45 meter & travel a horizontal distance of 75 meters. Trace the path of the ball , assume it to be parabolic by using the proper scale ?
- Q.13)A stone is thrown upwards from a building of 6m height & its highest point of flight just crosses a palm tree of 12 m height . Trace the path of the projectile if the distance between the building & the palm tree is 3m?
- Q.14)Construct a parabola by tangent method when base  $AB = 60$  mm & axis  $CD = 30$  mm?
- Q.15)A fountain jet discharges water from ground level at an angle of  $60^\circ$  to the horizontal. The jet travels a horizontal distance of 8 m from the point of discharge & falls on the ground Trace the path of the jet & name the curve ?

**Q.16) A fountain jet discharge water from ground level at an inclination of  $50^\circ$  to the ground. The jet travels a horizontal distance of 9 m from the point of discharge & falls on the ground. Trace the path of the jet ?**

## **Hyperbola**

**Q.17) Construct a hyperbola by general method when distance of focus from directrix is 50mm &  $e = 3/2$ ?**

**Q.18) A point 'p' 30 mm & 50 mm respectively from two straight lines which are at right angle to each other. Draw a rectangular hyperbola through point p within 10 mm distance from each line?**

**Q.19) Construct a rectangular hyperbola when a point p on it is at a distance of 15mm & 20 mm respectively from two asymptotes ?**

**Q.20) Two straight lines OA & OB makes an angle of  $75^\circ$  between them. P is a point 40 mm from OA & 50 mm from OB. Draw a hyperbola through P with OA & OB as asymptotes, making atleast 10 points?**

**FOR**

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Classes on (ED,BEEE,M1,M2,M3,NA,CONTROL,DSP & other GATE oriented Engineering Subjects)

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