Reg. No.																

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS

UNIT-IV-ASSIGNMENT QUESTIONS

18MAB101T- Calculus and Linear Algebra

1. Find the radius of curvature at the point $(\frac{3a}{2}, \frac{3a}{2})$ on the curve $x^3 + y^3 = 3axy$.
2. Show that the circle of curvature of $\sqrt{x} + \sqrt{y} = \sqrt{a}$ at $(\frac{a}{4}, \frac{a}{4})$ is $(x - \frac{3a}{4})^2 + (y - \frac{3a}{4})^2 = \frac{a^2}{2}$.
3. Find the radius of curvature at the origin for $x^3 + y^3 - 2x^2 + 6y = 0$.
4. Find the equation of the evolute of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.
5. Find the envelope of the family of straight lines $y\cos\alpha - x\sin\alpha = a\cos 2\alpha$.

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