

**D.ED. (2 YEAR) DUE EXAMINATION, 2020**  
**(DE-403) PEDAGOGY OF MATHEMATICS EDUCATION**  
**Paper -III**

Time: – TWO Hours

M.M.: –70

**NOTE – Attempt any FOUR questions. All questions carry equal marks.**

1. Calculate the entire area of ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ .
2. By the method of first principle, Find the derivative of  $\cos x$ .
3. If  $y = \sin(m \sin^{-1} x)$ ,  
prove that  $(1 - x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} + m^2y = 0$
4. Find the equation of tangent and normal to the curve  $x^2 + y^2 = 25$  at (3,-4).
5. Solve  $\int \sin^{-1} x \, dx$ .
6. Find the area of the circle of the radius 'r' using integration.
7. Solve  $\frac{dy}{dx} = e^{x+y} + x^2 e^y$ .
8. Solve  $(1 - x^2) \frac{dy}{dx} + y = e^{\tan^{-1} x}$ .