

## Worksheet of Chapter -5

Class-XII

Subject -Maths

1. Find  $\frac{dy}{dx}$ , if  $y^x + x^y + x^x = 0$

2. Find  $\frac{dy}{dx}$ , if  $y = \frac{\sin(ax+b)}{\cos(cx+d)}$

3. Differentiate:  $(x + \frac{1}{x})^x + x^{(1+\frac{1}{x})}$

4. Find  $\frac{dy}{dx}$ , if  $y = a \sin t$ ,  $x = a (\cos t + \log \tan \frac{t}{2})$

5. If  $y = \cos^{-1} x$ , prove that  $(1-x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} = 0$