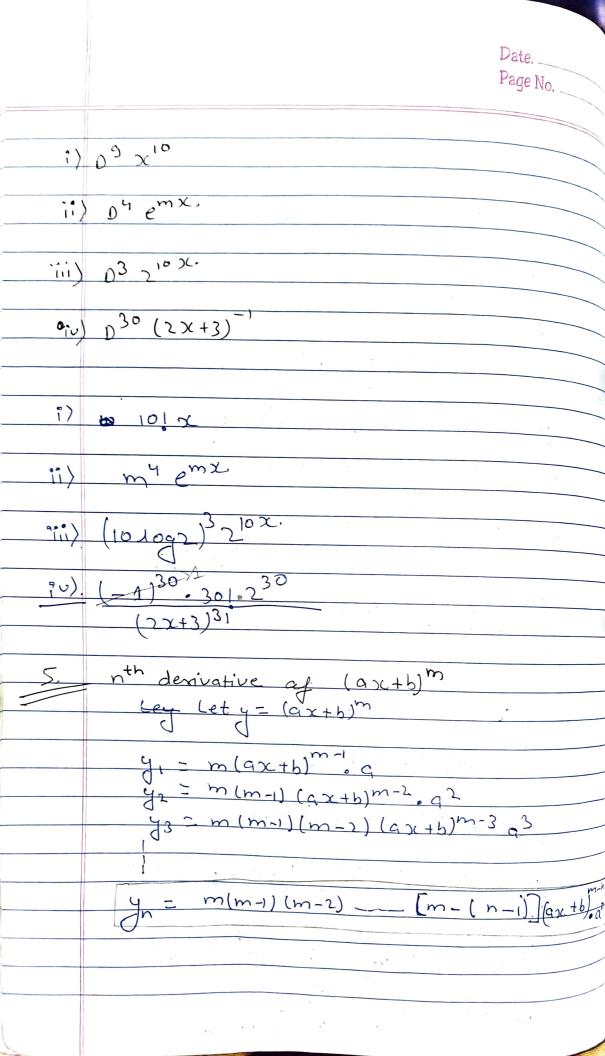
Date. ____ Page No. .

Successive Differenciation
$\frac{dy}{dx^2} = f(x)$ $\frac{dy}{dx^2} = \frac{d^2y}{dx^2}$ $\frac{dy}{dx^2} = \frac{d^2y}{dx^2}$
Dy, Dry Dry yn'
71 / Jn
Calculation of nth desirative
i) xm
Let y = xm Let y = xm
$4^{2} = m(m-1) \times m-5$
$45 = m (m-1)(m-2) \sim m-3$
$\frac{1}{43} = \frac{m(m-1)(m-5)}{45} = \frac{2m-3}{m-5}$
$y_n = m(m-1)(m-2) \cdot \cdot \left\{ m - (n-1) \right\} 2^{m-n}$
$= D^{m} x^{m} = m(m-1)(m-2) - \{m-m+1\}x^{m}$
=m(m-1)(m-2) $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$

Date. _____ Page No. _____ eax. Let y = eax = qne qx amx. : Let 42 amoc 41 = m 9mx (10g 9) = (m1099), a 92 = (mloga) = amx. 43 - (m/099) 3 9 m)C. amx=(mloga) amx yn = (mloga), amx $\frac{1}{ax+b} = \frac{1}{ax+b} = \frac{1}{ax+b}$ $y_1 = (-1) (ax+b)^{-2} \cdot q$ J2= (-1)(-2) (ax+b) 3 93 43 = (-1) (-2) (-3) (ax +b) -4a3. yn= (-1) n1 (a) (+5) (n+1) an 0 (-1) n an
(-1) n an



Date. _____ Page No. ____

log (9x+b) (et y = log (9x+b) $\frac{C_1}{C_1} = \frac{(-1)^2}{(4x+b)^2}$ $\frac{43}{(9x+6)^3}$ $\frac{9}{9} = \frac{(-1)^{n-1}(n-1)}{(9)(+1)^{n}} \cdot \frac{9}{9}$ Sin(ax+b) let y = Sin(ax+b) $= a \sin \left(\frac{1}{2} + a x + b \right)$ 72 = 92 CON (TT + 97(+b) = 92 Sin (9x+b+ 2TT = 93 CON (ax+b +2TT) = a3 sin / ax + b + 3 TP yn= ansin actb +nT Dr con(ax+b+2) 29h con (ax+b+2)