Sanarject Singh Crandhia more descente 102103145 Date Page 3005 Assignment 6- Parameter Estimation $\frac{1}{\sqrt{2\pi\sigma^2}} = \frac{-(x-h)^2}{\sqrt{2\sigma^2}}$ $\frac{1}{\sqrt{2\pi\sigma^2}}$ $\frac{1}{\sqrt{2\pi\sigma^2}}$ $\frac{L(X_1, X_2, X_3, ..., X_n) = f(x_1) \cdot f(x_1) \cdot f(x_1) \cdot ... f(x_n)}{2 \cdot \left(\frac{1}{2\pi \sigma^2}\right) \cdot \left(\frac{1}{2\pi \sigma^2$ Taking In both sides ln(L) = -nln(2x02)+ £ ((xi-4)2) Taking derivative with (of of ())

2(1) = 0 + 2 - (2(xi-m)) = 0

21 252 = E (N:-M)=0 2 NX - NM = 0 Heru O1 = x ise Jamph mun Taking derivetive wat F^2 (y = 9 0) $\frac{\partial \ln(L)}{\partial \sigma^2} = -n + \frac{2}{2} - (x_1 - x_1)^2 = 0$ $\frac{\partial \sigma^2}{\partial \sigma^2} = \frac{2\sigma^2}{2\sigma^2}$ $-n + \frac{2}{5} - (xi - m)^2 = 0$ N= Z (Xi-4)2 б = 1 2 (Xi- M)2 п i=1 Huu OL = 1 2 (X:-M)2

6	Samarjeet Singh Gandhi 102103145 Bate Page
2->	Binarial distribution - 10x: 0xi(1-0) n-1/2
	L= T ^(x; 0 1/2 (1-0)^-12;
	いってい ター・イノナー・株工
	dog on both sides
	(1) - M Line of Sangle of Airp or
CANY - C	log L= 2 (log (^(xi) + log oxi + log (1-0)^-xi)
*	ly L= = 2 log (1(x;) + log 0 5 7; + log (1-0) 2 (n-10)
	in (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
	Differentiate wrt a
0	(L) = -1 (L) = -1 (X; -M)-1
0	d lug(L) =0
(10 do) in the witatish prestot
	1 Zx; =-11 0 Z (n-x) =0(1) NG
1	0 1-0
	1 En: -n2 +1 = 10 = 0
	0 (-0 11-0
	O = MA-XA F
	$\frac{1}{0(1-0)}$ $\frac{2\pi i}{1-0}$ $\frac{1}{1-0}$
	0(1-0) new 11-01 51 7=10 WAH
(11	Exi = n3 a wider were event
	0=0(12-3K)-3+ 1-=(1) N26
	-(20)2 722 726 Jan 216-17-
	10 = 5 10 / -> Aug
	n^2
	(M-1X) & E.A.
	3 - 1-3