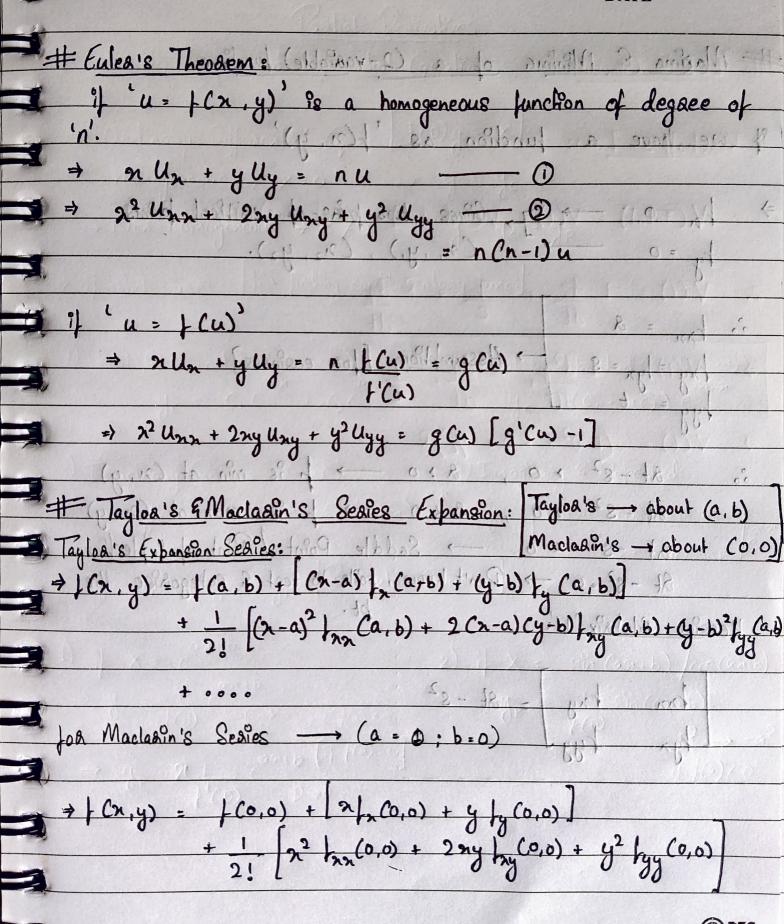
UE24MA141A -> Engineering Mathematics Pasial Dealvalives and Differential Equations I demonstrate # Oadinary Differential Eqn: L+Co)y = x] → Non-homogeneous → x≠0 → y= yc + yp * if Roots age: I too finding complementage func.] (10) 3) Imaginady Roots: (x ± iB)

4) Imaginady & Repeated:

ye = (c,cos pn + c, sin Bn) e ye = ((c,+nc,) xospn +

(c3 + nc4) sin Bn) e

Types of 67 foa 'yp': Paalieulaa Solution 2) 1/ X = 8in Can+b) /cos (an+b) $y_{p} = 1 + 8 \ln (an+b)$ $p^{2} \rightarrow -a^{2}$



Maxima & Minima of a (2-valiable) functions. 323 (21. 4) 95 a homogeneous function of legisce of we have a function as 'f(n, y)' un = gly = all > 1 = 0 - Gives two poss of carrical points ty =0 (Cn, y), (n2, y2). in at -82 >0, 2 >0 -> fils min at (2, y) (d. D) took = 82 200 0 1000 ack 0 2000 perisen maxiat (22, y) Saddle Point / Point of inflection. At -82-0 - Don't know , fails to test & categodise the Messian + (Malaix 1'M: 10 (6-10) (+ (1) pt. (6-10) 1 + tra try = 2t - 82 tyn tyy (a d o o (0.0) 1 5 5 (0.0) 1 BIC 1 (0.0) 1 C 1 (0.0)

# Linear Dillegential Equations	with vasiable co-efficients - 901
1] Legaandae's Equalion:	
	> Kendolle Low:
\Rightarrow $a_0 (an+b)^2 y'' + a_1 (an+b)y' + a_2y = \phi(n)$	
V(Total) = V(t) = V(Poductos) + V(sopostas) + V(sestitos)	
⇒ we take → z = log (an+b)	:. (an+b) dy = a dy - a Dy
⇒ e ² = (an+b)	1. (an+b) dy = a dy = a Dy 1. (an+b) dy = a dy = a Dy
WKT,	$\frac{1}{4} \Rightarrow (an+b)^{2} \frac{d^{2}y}{dx^{2}} = a^{2} \frac{0(0-1)y}{a^{3}}$ $= (an+b)^{3} \frac{d^{3}y}{dx^{2}} = a^{3} \frac{0(0-1)(0-2)y}{a^{3}}$
dy = dy dz	o ob sdx2 of 1 = (4) V 6
dn dz dn	=) (an+b)3 dy = a3 DCO-1)(0-2)4
\rightarrow dz = a	9(1) + d28 + 60 1) - (4) V (6)
der an + b	we substitute the value of
in dy dy (a)	'dz' in higher dessees & we got
dn dz (an+b)	dn the above.
2] Cauchy's Equations	
2] Cauchy's Equations The special case of Leghandae's Equation, (a=1, b=0)	