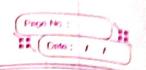
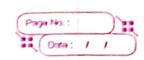
		0 0
210米	Wave Equation For Wave In Free Space	
	OR Lossless Medium	C. P. P. A. A.
	TO DE TOO TOOK TOOK	Gray K
	For free space =0	
0 = -0	1. (8) - 12 - 12 - 12 - 12 - 12 - 12 - 12 - 1	
	7XH - 6.8E 5 (3)	
	Hz 85 10 x0	
	EN STATE	
	Direction stravel	
	of wave travel	
	consider electromagnetic field travelligin a	cdirn
	consider electromagnetic field travelligin of having Ey and Hz component as show	۵.
	. 0 0 .	
(19)	consider Maxwell's equitatived from For	raday's
	ιαω	
, v	DXE = 1-08 TO = (12-11-11-11-11-11-11-11-11-11-11-11-11-1	<u> </u>
	·	
	ax ay az = = = =	
	2/22 2/32 = - 11.2 (HXax+ Hy ay-	Hzaz)
Vitter	Ex Ey Ez	
	U I	0
,	But existing components are only Ey	K HZ
	Plax Play Plaz = - Mo OHZ Toz	
	0 +6 Ey 0 26 Oh 25	3.169
	329	1. 32
	50 Ey = -450 Hz	1000
	(2	

22

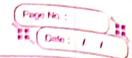
(2)



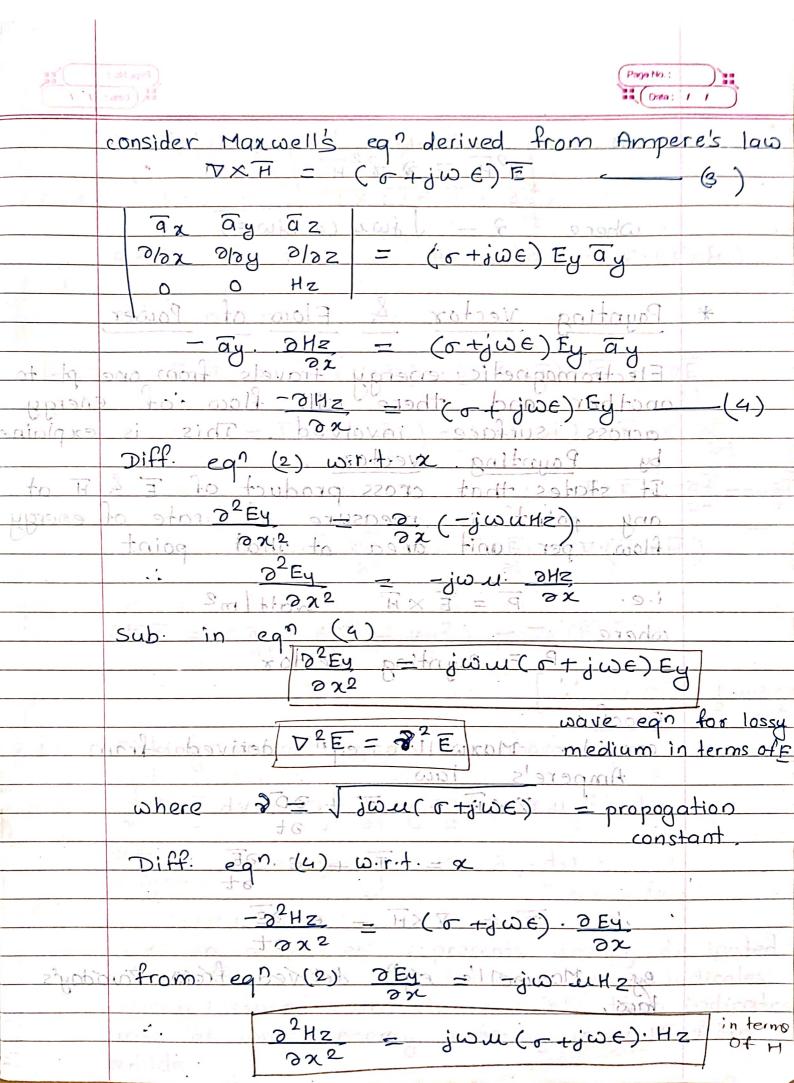
consider Maxwell's eqn derived from Ampere's 10, DXH = J + DD = OE + 6 DE (3) DXH = E. DE 百文 百y 百之 - 6.0½ [Fy] 百y 1 - ay to 32 Davita OHzana = SE on DEY Tabizan ox of 6 2+2 From eqⁿ(2) $\frac{\partial Hz}{\partial t} = \frac{1}{2}$ $\frac{\partial Ey}{\partial z}$ $\frac{\partial Ey}{\partial z}$ $\frac{\partial Ey}{\partial z} = \frac{\partial^2 Ey}{\partial z}$ $\frac{1}{3} \frac{3^2 \text{Ey}}{4} = \frac{3^2 \text{Ey}}{3}$ $\frac{1}{3} \frac{3^2 \text{Ey}}{3} = \frac{3^2 \text{Ey}}{3}$

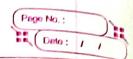


	D'Alembe	rts eq				
30	1011113-200	o Ey	1 - SVD44 3	2 ² Ey	wave equin free space or lossless medium in terms of E	
		70+-	ne o	025	in terms of E	
	and the second second					
^	Diff. eq	1 (2) L	s.r.f. t	~ *	V 1	
	9	, DEY	$= -u_0 3^2 + 3$	14		
	94	3x	_ 0	t ²		
A. 7.		o o Ey	= - u:	82Hz		
					54	
<u>F</u>	from eq?	(4)	DEY =	<u>−1</u> .	3Hz	
					2 .	
havie	72	<u>. 57111 816</u>	Hz manne	0 9	1/2,200 0+2	
	o' Alem	berts egn	ashagman	EN SHE	0. L.	
כולמעי	from Fi	2Hz	100 2 Hale	2H2	John terms of H	
0		94	ع سرو	30 3x	2 Grad	
	(-0`	- 1	1	VXE -		
	2 ² Ey	=	32Ey	· wite	-1	
	0t2	-u.G.	3x2	SP SP	10 TD 10	
<u> </u>	(NO	m / 2 -	(V/m	2/12 40	Sample I for in	
3	(50	C /	ue m	/	morning to be not as	
× .	=>-	J. ME	$=\frac{m^2}{s^2}$	6	9	
4.			sec2	5 5 -	- punited as	
	=>	e M. III	$=$ $=$ m_{-1}	Sec -301	ielocity	
		vine.				
	Velocity in free space					
		V -	Jee space	66 1	- 21	
			√Mo€0	V411	$-\times 10^{7} \times 8.85 \times 10^{-12}$	
		=	3×108 m	Isec	make in the later of the later	
			·		AND DESCRIPTION OF THE PERSON	

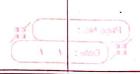


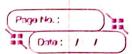
	Cos Vitalmajnij
- Ale	
	wave ear for wave in lossy medium or
10 3	Wave ear for wave in lossy medium or conducting medium
	ie. o - finite
	12 + LIW (8) Pob AHITLE
	2425 N - 136 5
	MZ S40 . x6 16
	SHE SHE WAS TO BE TO SHE
-	S FEy. y AG. NO
	La Dro of Land Con month
	Nove travel
	Fu & Ma composite
	Ey & Hz components
20 0 10	consider Maxwell's equ derived from Foradays
	- law 2x6 2x2 246
•	
	DXE = - jwuH - (1)
	Tax Tay az Sic Die Sic
	Plax Play Plaz = -jwu (Hzāz)
	O Ey O San
	ox oz jwu Hz az
	··
	1 - 1 w ett - (2)
	2 - Jω et Hz (2)





 $\nabla^2 \overline{H} = \Im 3^2 \overline{H}$ where 3 = Jour (otjw€) * Poynting vector & Flow of Power Electromagnetic energy travels from one pt. to another and there will flow of energy across surface involved. This is explaine by Poynting vector (s) me that It states that cross product of E& Hat flow per unit area at that point. i.e. XS P = E XH Watt m2 where Pointing vector Proof consider Maxwell's egn derived from Ampere's law 7XH-- 7 + 200 36 13 - HXV - ELISE By Marurell's egn derived from Paradays





Multiplying meg sbyp Eib gaillaga 2h Fix i d - E v F (= ME. (VXF) = È e 2 E v h E F) But, F(DXF) = H(DXF) - V·(EXF) - FEXT represents power flow per unit sub in above eqn DOVING DEGIT = H. (DXE) - VI (EXH) - E E: DE H.(-113H) - T(EXH) te ite sons (-2xio t-kz) ax un me in Use def of displacement current density EF dvo- Tusting volume Hintegral of above equal transpolation built of dissipated (ExH). do senergy flow. LHS in above eqn represents energy dissipated in volm. The 1st term in RHS indicates energy stored in ivolume & 2nd term indicates rate at which energy entering in volm from outside.

Applying divergence three orem in the Date: 11

(Fij dv = -) & (EE² + uH²) dv - & EXII ds

v) at (2 2 2)

... EXH represents power flow per unit area.

Area.

PXE EXH STATE Hence proved