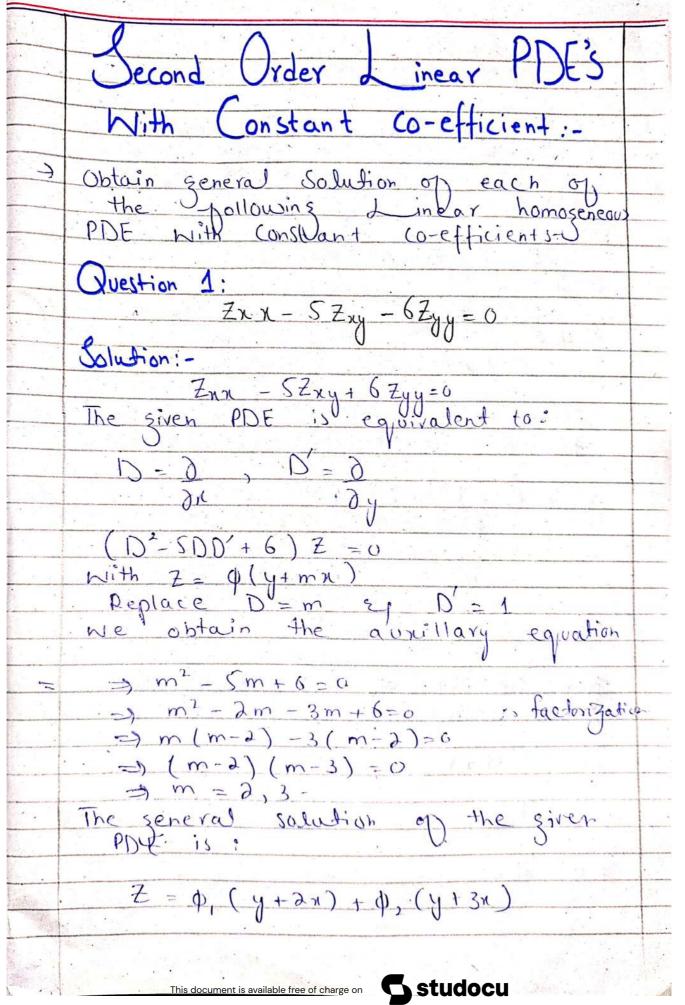
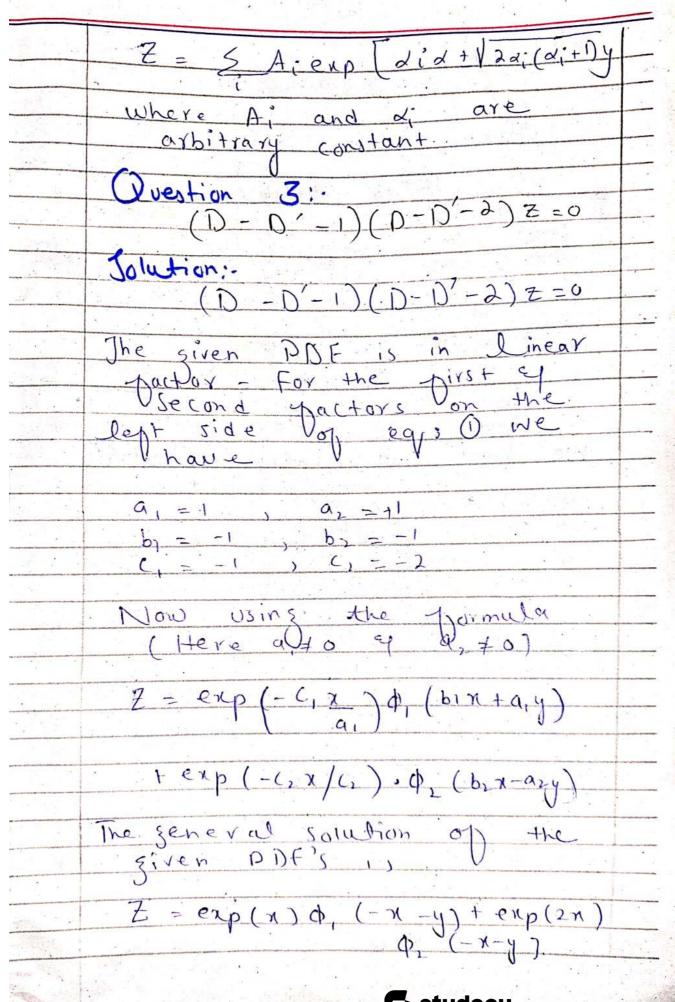


Cam Scanner 05-05-2021 04

Linear Algebra (National University of Computer and Emerging Sciences)



	_
Question 2:-	1
$(3D^2 - D'^2 + 2D)Z = 0.$	
Jolution:	1
Here (D.D') - (2D2-D'2+2D)	
is not homoseneous in D &	
is not homogeneous in D eq	
164	7
Z= Aexp(dx+By)	
thus Property	*
Since (2x2-B2+2x) Aex (xx+By)=6	
Since	
exp(22+By) +0 + ++0	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
then they are Obtaine arbitrary	
then they are Obtaine arbitrary constant of it pollow that:	
V .	
$= \frac{1}{2} \frac{\lambda d^2 - \beta^2 + \lambda \lambda}{\beta^2} = \frac{1}{2} \frac{\lambda^2 - \lambda d}{\beta^2}$	
$B^2 = \partial d^2 - \partial d$	
T. T	-
VB = V2 2 (2+1)	
$B = \sqrt{2\alpha(\alpha+1)}$	1
	80
por choice of each & we will	-
be find 13 -	District.
	100
So that:	SUM
Bi = Vadi. (dit1)	The same
	Contract of
Thus the general salution of the PDE's Sis-	Sec.
the PDE30 is	BAR.
	200
	1
	Section 1



10.1		
	Question 4:-	1
	Zxx-6Zxy+9Zyg=0	
		-
	Solution:	
	7 67 07	
	The cite DDCDC : 4 4 Zyy =0	
	The given PDF'S is equivalent	. 3
	10 = 7 . 0' = 7	
	$\begin{pmatrix} D = Q \\ D = Q \end{pmatrix}, D' = Q$	
	V	
	$(D^2 - 6DD' + 9D'^2) Z = 0$	11113
	Nith Z = p (y+mx)	
	Replace 1) = m, D=1	
	Replace D=m, D=1 We have a unillary equation:	
	$=) m^2 - 6m + q = 0$	
	$=$) $m^2 - 3m - 3m + 9 = 0$	- 1
	m (m-3) -3(m-3)	
	(m-3)(m-3)=0	
	m = 3, 3	
	Then the general Salution.	
- 111	of the J PDE's is:-	100
	7 - 1 (422) 2 2 1 2 1	
	$Z = \phi_1 \left(y + 3x \right) + x \phi_2 \left(y + 3x \right)$	
	Question 5:	
	$(2D+0'+1)^{2}Z=0$	
	Solution:	
	$(2D+D'+1)^{2} = 0$,
		- 3
	The given PDF f (D, 0') has	
4		

	repealed jactors therefore using the jornula.
	the jormula.
	Z = exp (-α) (φ (bn-ay) + x φ (bray))
, = 1 ¹	
	we obtain the general Salution
200	$\mathcal{Z} = e \pi \rho \left(-\frac{1}{2} x \right) \left[\phi \left(x - 2y \right) + \frac{\chi}{2} \phi \left(x - 2y \right) \right]$
-	Question 6:- (D2+DD'+D+D+1)Z=0
- 1	
	Solution:
	$(D^2 + DD' + D + D' + 1) = 0$
	Here ((D,D') = (D2+DD'+1)+1)
	Here $\int (D,D') = (D^2 + DD' + D + D' + 1)$ is not homoseneous.
	in D & D'
	Suppose that Z = Aenp (dn+By)
-	then Substitution we obtain.
	(d2+dB+d+B+1) Aexp(dn+By)=0->A
	lince
-	exp (dx+py + 0 & A + 0. it follows that
	it follows that
	-) d2+dB+d+B+1=0
	$B = -(\lambda^2 + \lambda + 1)$
	(2+1)
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7 (-) 61.	1 - cach chairs on 2 we	19.
	Day Pach Choice	2.0
April 1	Jor each choice of 2 we can find a value of B Thus there of are finite mumbers of Pair's (dir Bi)	
AV.	Dairy (d'a 23)	
	(a, b)	
.3	Paracled the vallet:	194
E ₁	Connected through:	
	$\beta_i = -\left(d_i^2 + d_i + 1\right)$	
	$(\langle \langle i + 1 \rangle)$	
	there have use can unite general	
	therefore we can write general solution of the given PDE as	
	3.110	
	Z = E Aienp (dix + Biy)	
-51		E
	$Bi = -(\lambda^2 i + \lambda i + 1)$	-4
		or .
	A A CONTRACTOR OF THE CONTRACT	
		198
		ATE:
		1
3 10		
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		Total