	E: ALTAF AHMAD  18MA20005  TEST-2.  DATE:26 0 21
	TANSWERS
5	P = 1
2	M(A) = closed subspace of X., dim N(A)= O  A is a bounded operator
(3)	True
4	False  R(A) 13 closed subspace of X
5	K(A) 13 CABSES 100034
	And the state of t

	CN EDAN Solution Date:			:ON EQUATE:  : STACL  : STACL
()			(e)	X= C1[0,6] V, C[0] 17 6-14 11
0	X= Coo with norm 11.11p., 1 ≤ p ≤ 0	4.09		8 A V = Y L delind as
	$f: X \to K$ $f(x) = $ $\xrightarrow{S} x(i)$			X= C'[0,b], Y = C [0,b] both with norm!!  & A: X → Y be defined as.  Ax= x', x ∈ X.
A CONTRACTOR OF THE CONTRACTOR	1	1		7A= 7 / A= 73.
	$\mathcal{X} = (\chi(1), \chi(2) \dots) \in X$	100	-	$\frac{1}{x} = x$ . for $x \in x - y$ .
	h times to be a considered	man !		I a sequence of my in X such that .
	let n= (1,1,1,-,1,0,0,0)	9		xn→x ∈ Y
	11 ×n/10 = sup   ×n(1)  = 1)	1	V.	
				sequence of (xn, Axn)) is a sequence in the graph of A, it
	$+  f(x_n)  =  \Xi, x_n(i)  \leq \Xi  x_n(i)  =$	n		sequence in the graph of A of
	3-1		4 m/C_	(Mn, Axy) - (x, x) (+G1(A).
	$ f(x_n)  = n \longrightarrow \infty$ 16 $n \rightarrow \infty$			= G1(A) is not closed subspace of Yx Y.
		. And And States	20 m	0 . 0
	thus for a bounded sequence d'xn's, df(xn's 13 unbounded.	100	WI S	: A is not a closed operator
	d xn3, et (xw 4 13 un bounded.			1 0 10 10 10 10 10 10 10 10 10 10 10 10 1
	- f is discontinuous	ACMA PART		but if the domain of a bounded operator is.
	So, it is discontinuous for pzto.			awa subspace, then, It is a closed of enator
	and I have been been			Now we by Ud of 10 of 1
	similarly it is discontinuous for p?	i.		Now, we know that of A & BL (xy); then the null space, N(A) is a closed
Association of the second		190		Substitute of the substitute o
				Subspace of X
34				Now, we have to see dim (N(A))
1	No. of the second second	- 4		Company of the second s
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The state of the s			14.	
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			and the second section		
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(3)	X - normed linear space &			- dit (x, N(f)) = dit (8+220, N(f))	
Marin the	f: X - K is a linear functional.	28		$= dist(\Delta x_0, N(\xi))$	
	we know that a more linear			- OUST (&765, N(F))	
	linear form is continuous iff. 175			=  a  dut (xo, Nf))	-
MEET .	permel is closed.				
	,			" Xo (+N(+) + dix+ (xo, N(+)) +U.	
201	Now it N(f) is closed is x.				
i ii	then f is continuous for every			$\frac{f(x)}{f(x_0)} =  x  = \frac{d(s+(x, N(f)))}{d(s+(x_0, N(f)))}$	
ALC:	20 ← X - N(f)			f(xo). dist (xo, NG)	
	1				
A Time to	11+11= 1 f(x6))		. 1	⇒    f   ≤   f(x <sub>0</sub> )	
	dot (x, Nf)).	1.5		dist (xo, N(f))	
Market Company					
Marie San Comment	let xo ex such that f(xo) = 0.			> f is antimous	
	then & X & X.			X	, - J-
Property Co.	then $\frac{1}{x} \times \frac{1}{x} \times $			A also + viene)	
Jacks	+(No) 7(x)	-14		$ f(x_0)  =  f(x_0) - f(u) $	-
RMD=	- 4 + 0 x	7.51		(1(76) - T(u))	
	= y + d %	1/10		=   f(m-y)	
	Lu y = x - f(x) x N= f(x)				
	when $y = x - \frac{f(x)}{f(x)} \times \alpha = \frac{f(x)}{f(x_0)}$			=   f  1 No-4/	
100 mm	A share of the same of the sam			thus	
	$f(y) = f\left(x - \frac{f(x)}{f(x_0)}x_0\right).$			the null space N(f) is closed space	01 · X
	1 (%)	1		It and only it of is continued	6
	$\frac{f(x)}{f(x)} - \frac{f(x)}{f(x)}$	- 58			
	f(x)			Tom	1
10	=0 ⇒ J E N(P)			12	
The state of the s	0,				
		The Course			1

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(4) X - finite dimensional nlv. (5) X Y - banach spaces to	
(4) X - finite dimensional Nis. By y - banach spaces 4	
# dAn x & converges for every nox. & x => supspace of X.	injective
the a hundry of x-y is define	
Ax = lim An x x ex. if A-1: R(A) -> x 1> continu	200
if $d$ An $N$ $d$ converges for every $n \in X$ .  A $d$	
for any M, y E X, x, P E k  Since A is injective of closed , to R(A) is also close. I ben	del
<b>グルイン</b>	
A (dx + po) = lim An (ax + po). A Since X is a Bonach Space	
	of X
= lin [ x /n x + p An y]   = lin [ x /n x + p An y]   = R(A) is a closed subspace	•
= X Ax+pAy	
	• • • • • • • • • • • • • • • • • • • •
7 A E L (X, X)	
17   An - A   → Ø as n→ ∞	
ie. Anis a bounded operact	
but A 13 port a boundard	
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