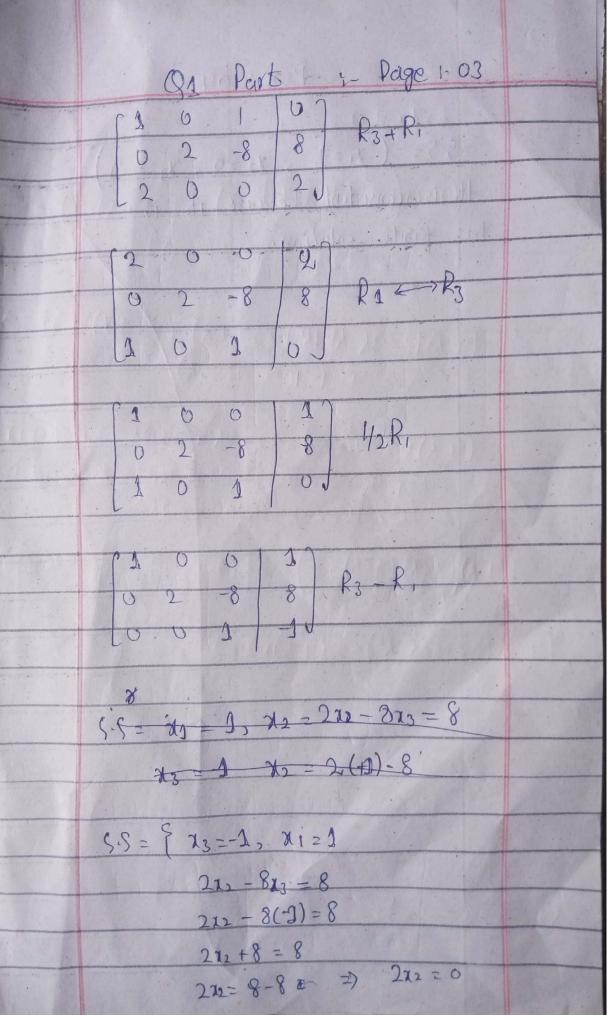
Name : Abbas khan	
R.No 3 16049 Samester 3 2nd	
Paper 8 I mear Algebra Submitted to1: Shakeel six	
Dater 30/06/2020	

	PageHOL I.D: 16049	19 19 19
Q1	Given !	
	11-0x2 - x3 = 0	
	$2x_2 - 8x_3 = 8$	
	$5x_1 - 5x_3 \cdot z = 10$	
	So Findout = 1 (1) &	
	Consistent or Not?	
	Golubione	
	Let 2 3rd ID = 0	
	X1 - 0X2 + X3 = 0	
	$2x_2 - 8x_3 = 8$	
	521 - 523 = 10	
	$\chi_1 + \chi_3 = 0$	
	$2x_1 - 8x_3 = 8$	
	$5x_1 - 5x_3 = 10$: $(5x_1 - 5x_3 = 10)$	+5)
	11 + 2/3 = 2 0	
	$\chi_1 + \chi_3 = 0$	
	$2x_1=2$	
		-
	$(x_1 = 1)$	

page # 02	Q1 Pont 101- 16049
	$x_1 + x_3 = 6$ $(x_3' = 3)$
	3+23=0
	[73 = -1]
	$2x_2 - 8(-1) = 8$
	2x2 + 8 = 8
	212 = 8-8
	21/2 = 0
	$(\lambda_2 = 0)$
	Now
	(1 0 1 0) 0 2 -8 8
	[50-5 W]
	0 2 8 8 R3 115
	[5/5 0/5-5/5 10/5]
	[1 0 1 0]
	[10-12]



Page 1-04.	
12=0	
$5.5=(x_1=1), x_2=0, x_3=-1)$	7-7-7
It is consistent because it is	
has finite solution.	
	•
	,
	10000

	Dege # \$ 05 1] I.D. 16049
Ans 2	Given 2
	F3 4 5 7
2.3	A = 2 -1 4th-10
A. W. C.	5 -2 7
	Findout z Adjoint Method.
	Solutione Let : 445-10 - 11
	Let: 4+h-1D = 4
	[3, 4, 2]
	2 - 2 4
	5, -2 7,
	Now we find the co-factors:
	$A_{11} = (-1)^{2+2} = -2 $ $ -2 $ $ -2 $ $ -2 $ $ -2 $ $ -3 $
	(1)1+2
	$\frac{1}{12} = (-3)^{1+2} = \frac{2}{507} = \frac{1}{100} = \frac{1}$
1	15071
	$\frac{1}{3} = \frac{1}{2} = \frac{1}$
4	Ay An (-1)2+1 14 Cl 2/2 (1)
	1-27 - 1 (28 - (-10) = -38
	$A_{22} = (-3)^{2+2} = 3$ $5 = 1(21-25) = 4$
-	15 7

Page's Mob Pont I.D:	16009
$A_{23} = (-1)^{2+3} = \begin{vmatrix} 3 & 4 \\ 5 & -2 \end{vmatrix} = (-6-20) = +24$	A 260
5 -2 · · · · · · · · · · · · · · · · · ·	
$A_{31} = (-9)^{3+9} = 4 5 = 2(16+5) = 21$	
0 (10)3+2 19 5]	
$A_{30} = (-1)^{3+2} = [3 5] = -6$	
$A_{332} = (-1)^{3+3} = 3 + 1 = 1(-3-8) = -11$	
Now: - Au Au Au	
A21 A22 A23	
A21 A22 A23 A31 A32 A33	
Puting the values:	
0 1 6 1	
21 -16 -11	
$A^{\dagger} = \begin{bmatrix} 1 & -38 & 21 \\ 6 & 4 & -16 \end{bmatrix}$	
[] 24 -AJ & Ans	

(2)	Page# 08 07 I.Dr 96049
Ans 3	Siven:
	2x+2y+42=18
	x + 3y + 2z = 13
	3x + 2y - 3z = 14
	Findout =
	Gauss Jorden Method
	Solution:
	[2 2 4 18]
	1 3 2 13/
	3 2 -3 14
	[1 1 2 9]
	R1=1/2R1
	2 23
	[3 2 -3 44]
	[1 1 2 9]
	0 2 0 4 R _{2=R₂-R₁}
	L3 2 -3 14)
	CA
	[2] 2 9]
	0 2 0 4 R3 = R3-3R1
	10 -3 -3 -13
	070

Pager of C	8	Dank	+ 0. 14.	1.0
		Q3 Parts		49
	13	-D	1010	
	0	1 0 2	The Park House to the second	
	0	-3 -13	John X	
		N. J. Comp.	Carrie Marie	
	1	1 2 9	R - R + R2	
	0	1 2	mind .	
	U	0 3 一档。	Solution .	
			THE COLUMN THE	
	1	0 2 7		
	0	0 0 2	R12R1-R2	
	0 (0 -3 -11		
BARRIER.	May 15	A STATE OF THE STA		
	1 0	, 2 7]		
	0 1	0 2	R3 2-1/3 R3	
	0	0 2 11]		
	restante.	3		
	1 0	0 -19		
	0 1	0 -19 3	R1=R1-2P3	
	0 0			
	VALUE	1/3		THE REAL PROPERTY.
35	S : X	= -19.1.4	2 2 3 2 200	
		3 0	= 2 e Ans	100000000000000000000000000000000000000
		2= 11/3		
		19		

	Page # 07 J. D. 16049
Ans 4	Given: (XIV.(XIX. (1))
	[4,2,1-2]
	-5 3 2
	[2 4 1]
	Solution =
	Let $A = \begin{bmatrix} 4 & 2 & -2 \\ -5 & 3 & 2 \end{bmatrix}$, $J = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
	for eigen values Ist I find to
	A-AI.
	$A-\lambda I = \begin{bmatrix} 4 & 2 & -2 \\ -5 & 3 & 2 \end{bmatrix} + \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$
	[-2 4 1] [0 0 2]
	A-KIE (4-K 2 2)
	-5 3-4 2
	L-2 M 11-KJ
Mary h	so taking determint.
	A-KI = 4-K 2 2
	-5 3-A 2
1	-2 4 1-4
11	Expand by Row I
- A-r]= (4-1) [(3-1)(1-1)-8]-2[-5(1-1)+4]-2[-20+2(3-1)]
2	(4-1)(3-1)(1-1)-8(4-1)+10(1-1)-8+40-4/3-1)
	2 (12-4A-3K+K2) (J-K) (-52+8K+10-10K+8+40-12H4K
1	PITO

Pose 810 Ans 4 Parts $\frac{1.0 \times 18049}{1.0 \times 1.0 \times 18049}$ $\frac{1.0 \times 18049}{1.0 \times 1.0 \times 1.0 \times 1.0}$ $\frac{1.0 \times 18049}{1.0 \times 1.0 \times 1.0}$ $\frac{1.0 \times 184 \times 1.0}{1.0 \times 1.0} \times 1.0$ $\frac{1.0 \times 174 \times 10}{1.0 \times 1.0} \times 1.0$ $\frac{1.0 \times 174 \times 10}{1.0 \times 1.0} \times 1.0$ $\frac{1.0 \times 174 \times 10}{1.0 \times 1.0} \times 1.0$ $\frac{1.0 \times 174 \times 10}{1.0 \times 1.0} \times 1.0$ $\frac{1.0 \times 174 \times 10}{1.0 \times 10} \times 1.0$ $1.0 \times 174 \times 1$		
= (12-7k+k')(1-k) = 2+2k $= 12-12k-7k+7k'+2k'-k'-2+2k$ $= 10-17k+8k'-k'$ $= k'+8k'-17k+10=0$ $(x-1)(-k'-7k-10)=0$ $= k-3$ By Synthitic dividion. $= k-3$ $= k'+3k-10$ $= k'+3k-10$ $= k'+3k-10=0$ $= k'+3k+2k-10=0$ $= k'+5k+2k-10=0$ $= k'+5k+2k+$		
$= \frac{(12-7\lambda+k^2)(1-\lambda)}{2(12-12\lambda-7\lambda+7k^2+k^2-k^2-1+2\lambda)}$ $= \frac{(12-12\lambda-7k+8k^2-k^2-k^2-1+2k+10}{2(12-17k+8k^2-17k+10} = 0$ $= \frac{(12-12k+8k^2-17k+10}{2(12-12k+10)} = 0$ $= \frac{(12-12k+8k^2-17k+10}{2(12-12k+10)} = 0$ $= \frac{(12-12k+8k^2-12k+10}{2(12-12k+10)} = 0$ $= \frac{(12-12k+12k+10)}{2(12-12k+10)} = 0$ $= \frac{(12-12k+10)}{2(12-12k+10)} = 0$ $= \frac{(12-12k+10)}{2$	4.02-1604	9
$= \frac{(12-7\lambda+k^2)(1-\lambda)}{(12-12\lambda-7\lambda+7k^2+k^2-k^2-1+2\lambda)}$ $= \frac{(12-12\lambda-7\lambda+7k^2+k^2-k^2-1+2\lambda)}{(12-17k+8k^2-17k+10=0)}$ $= \frac{(12-17k+8k^2-17k+10=0)}{(12-17k+8k^2-17k+10=0)}$ $= \frac{(12-12k+8k^2-17k+10=0)}{(12-17k+8k^2-17k+10=0)}$ $= \frac{(12-12k+8k^2-17k+10=0)}{(12-17k+8k^2-17k+10=0)}$ $= \frac{(12-12k+8k^2-12=0)}{(12-17k+8k^2-12=0)}$ $= \frac{(12-12k+8k^2-12=0)}{(12-12k+8k^2-12=0)}$ $= (12-12k+8k^2-1$	Past Ans 4 Parts	10 116
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2 (12-7h+h) (1-h) = 2+2h	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12-121-714712-13-2+21	
$(K-1)(-K^{2}+1) = 0$ $(K-1)(-K+1) = 0$ $(K-1)(-K+1) = 0$	= 1n-17h+8h²-h³	
(K-1)(-K-7)(-10) = 0 $K=1 By Synthitic division.$ $1 - 1$	13: 812-174+10=0	
Ry Synthitic dividion. 1 -1 8 -17 10 1 -1 7 -10 -1 7 -10 (λ - Δ) ($-\lambda^2$ + 7λ - 10) = 0 (λ - Δ) ($-\lambda^2$ + 7λ - 10) = 0 (λ - Δ) + λ -	2 N + ON 11/2 7/ -10) 20	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(N-3) (-11-1) to divideron.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	By Symmore com	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2 -1 8 -17 10	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
$(\lambda - \Delta) \left(-\lambda^{2} + 7\lambda - 10 \right) = 0$ $(\lambda - \Delta) \left(-\lambda^{2} + 7\lambda - 10 \right) = 0$ $(\lambda - \Delta) \left(-\lambda^{2} + 7\lambda - 10 \right) = 0$ $(\lambda^{2} + 7\lambda - 10 = 0)$ $(\lambda^{2} + 7\lambda + 2\lambda - 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 2\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda + 10 = 0)$ $(\lambda^{2} + 5\lambda$		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1-1 8 -17 10	
$(\lambda - \Delta) (-\lambda^{2} + 7\lambda - 0) = 0$ $\lambda = 0$ $-\lambda^{2} + 7\lambda - 0 = 0$ $-\lambda^{2} + 5\lambda + 2\lambda - 0 = 0$ $(\lambda - \lambda + 5) = 2(\lambda + 5) = 0$ $(\lambda - 2) = (-\lambda + 5) = 0$ $\lambda - 2 = 0 = -\lambda + 5 = 0$	-2 7 -10	
$(\lambda - \Delta) (-\lambda^{2} + 7\lambda - 0) = 0$ $(\lambda - \Delta) (-\lambda^{2} + 7\lambda - 0) = 0$ $-\lambda^{2} + 7\lambda + 2\lambda - 0 = 0$ $(\lambda - \lambda^{2} + 5\lambda + 2\lambda - 0) = 0$ $(\lambda - \lambda + 5) = \lambda + \lambda$	-J 7 -10 D	
$(\lambda - \Delta) (-\lambda^2 + 7\lambda - 10) = 0$ $\lambda = 0$ $-\lambda^2 + 7\lambda - 10 = 0$ $-\lambda^2 + 5\lambda + 2\lambda - 10 = 0$ $\lambda (-\lambda + 5) = 2(-\lambda + 5) = 0$ $(\lambda - 2) = 0(-\lambda + 5) = 0$ $\lambda - 2 = 0 = 0$ $\lambda - 2 = 0 = 0$ $\lambda + 5 = 0$		
$-1 \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 0$ $-1 \frac{1}{4$		
$-K^{2}+5K+2K-10 \geq 0$ $K(-K+5)=2(K+5)\geq 0$ $(K-2)=(-K+5)\approx 0$ $K-2=0 \qquad 3-K+5\geq 0$	Les della de	
$(\lambda-2)=(-\lambda+5)=0$ $(\lambda-2)=(-\lambda+5)=0$ $(\lambda-2)=(-\lambda+5)=0$	-, L2+7h-l0 20	
(A-2)=0(-A+5)=0 A-2=0 3-1+5=0	- 12+5h+2h-10 20	
1-2=0 3-1 +5=0 (A)	L(-1+5)-2(1+5)=0.	3
1-2=0 3-1 +5=0 (A)	(h-2) = (-h+5) = 0	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1=2 7 + 1= 15	1 1 1 2 5 + K = 45 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
AS 2 1 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13911/2511	Part of the last o
A STATE OF THE PARTY OF THE PAR	A STATE OF THE STA	

	Page 11:2) Ans QY	
	Its eign values are 2,1,5	
	so all of this eight values are	orginal Indiana Pari
	distiniet Matrix A is a diagonal	izable
	of we can diagonalize it by	
	finding bases vector which is not	
	the part of Questrin.	
1		
1		

16049 Ans 5, Page1-12
Given 2
321+542-423 20
$-3x_1 - 25x_2 + 4x_3 = 0$
6x +12-8x =0
Solutioni
Leb Az [3 5 -4]
-3 -25 4
6 1 -81
Expand by RD
23 25 6 -5 -3 4 -4 -3 -25
11 -81 16 81 16
2 3(200-4)-5(24-24)-4(-3+150)
= 3(196)-5(0)-4(147)=
2 3(190) - 4(147)
= 288-2886 = 0
Here IAI = 0
Hence the solubion of given system
is toval 1.e (-5 = {,0,0,0}.

OR		
	pagre# 12 2 10=16049	
Ans 5	Given:	
	$3x_1 + 5x_2 - 4x_3 = 0$	
	$-3a_1-25a_2+41_3=0$	1
	6x1 + x2 - 8x3 = 0	
	Solutioni	
	Write in Matrix form	
	Let A= [3 5 -4 0]	
	-3 -25 9 0	
	16180	
	[3 5 -4 0	
	0-20 0 R2+ DR	
	[6 1 8] 0]	
	3 5 -4 0 0 -20 0 0 R3-2R1	
	[0 -9 +16] 0]	
	[3 5 +0 0] blows	
	0 20 0 taking 13=0 and	X2 free
	50 - 9 = 16 = 0	
	10 10 x1=-5/3x2	
	X= 1	
	7 12	
	1 1/3	
		The second second

	do pu
Thought	Page#013
Ans 6	Given 8-00-1-1
	f 1 3 4 3 1
	10 3 , 9 , 12 31
	[1 3 4 0]
	Findaut = 1 Rank=?
	Solution :-
	11 [1 31 4 3]
	3 9 12 3
	113401
	$\begin{pmatrix} 2 & 3 & 4 & 3 \end{pmatrix}$ $R_2 = R_1 - 3R_1$
	-6
	[1346]
-	2 3 4 3 7 0 0 0 6 R3 = R3 - R1
	[0000]
-	$C_2 \longrightarrow C_2-3C_1$
	C3 - 3 C3 - 4C1
	Cy -> Cy-3Cg
- 13	

	Page 14 Ams 6 Port J.D 1-16049
	(1 0 0 6) (1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	000-6
	[0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
/	Chang colony with 2
	0 -6 0 0
	[0 0 0 0]
	Divide column 2 by -6
	[] []
	0 10 0
	0 0 0
	better the property of the party of the part
	Ran A M (1)
	(10000)
	0 0 10 0
	0 0 0 0 0
A A A	(A) - (12) (12) (12) (13) (13) (13) (13) (13) (13) (13) (13
	Rank = 2 = Ans
3 (0)3	D. C. Barde J. W. M. Danard.