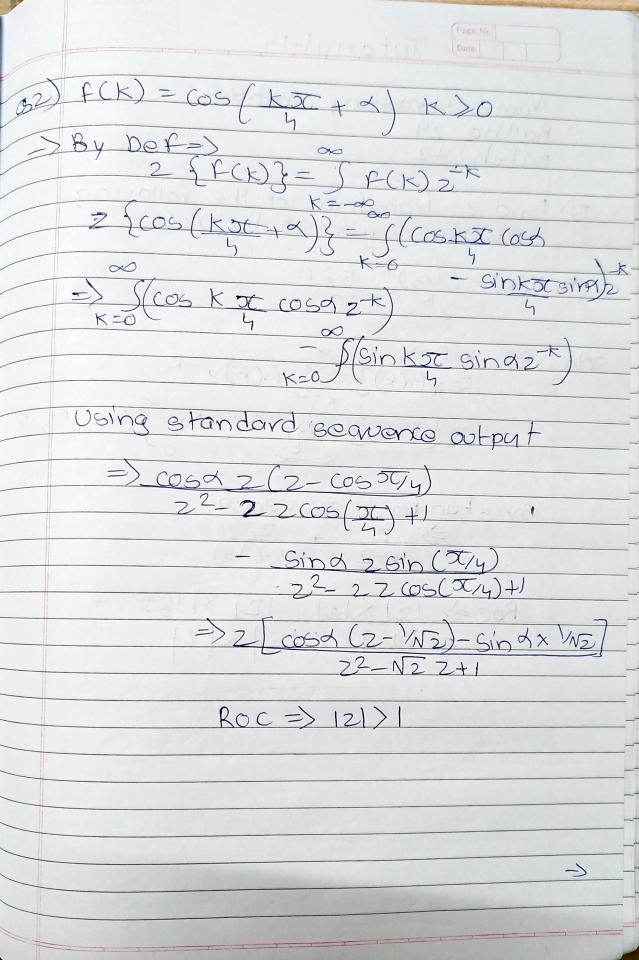
	Page No.
	Tutorial-14
	101011311
	Name: Shreering Mhatre
1	Rollno: 29
	Batch: A2
	Find z- transform of the following
(31)	sequence & montion the Roci
	sequence a marsillar
21	
0	F(K) = (1/3) K > 0
	$f(k) = (1/3)^{k} k > 0$ = $2^{k} k < 0$
-	
	By $def \rightarrow \infty$ $Z\{f(k)\} = \int f(k)z^{-k}$ $K = \infty$
Soln:	54 CE (+12 - (F(K)2-K
	23 P(N) 5 J C C C C C C C C C C C C C C C C C C
	Z {F(K)}= {2K 2-K+ \$(1/3) k2-k
	Z 1 F(K) (= 3 2 2 + 1 (1/3) 2-N
	K=-00
	(4DC60) - C10 bear (= 1)
	By standard sequence.
	-> 7 2
	$2-7+\sqrt{2}$
	$\begin{array}{c} \rightarrow  2  +  2 \\ 2  - 2  2  (\sqrt{3}) \end{array}$
	14 (1/2 1/20) ( 0 - 2 0
	Roc=> 12/5/12/ 12/5/1/3)
MEL	$=\frac{1}{3}$ $\langle 2   \langle 2  $
	13/12/1
	RCC=>121>1
6	



(3) P(K) = e-3K Sin4K K20 501 n > By def > 2 { F(K) } = { F(K) 2 - K 2 { = 3ksin4k} = \$ (0-3ksin4kz-k By using property > Here a = 3 2 { Sin 4k = S Sin 4k 2 \*  $\Rightarrow 2\sin 4$  $2^2 - 27\cos 4 + 1$ : ROC For F(K) = Sin(4K) => 12/)1 -: 2 { e-3ksin4k}= (e-3ksin4k2-k  $Ans \Rightarrow e^3 z sin 4^ e^6 z^2 - 2e^3 z (os 4+)$ Roc => 12031>1

\$\f(\k) = 2\k \cos(3\k+2) \k\>0 soln) By dofn ) 00 2 { F(k) }= { F(k) }= \*  $\frac{1}{2} \left\{ \frac{1}{2} \left( \cos(3k+2) \right)^{2} = \left\{ \frac{1}{2} \left( \cos(3k+2) \right)^{2} \right\}$ Here we will use property -> z{akf(k)}=f(2/g) 2 { cos (3k+2)} = (cos3k(os22 - sin3ksin22)  $= \frac{1}{20052(70053)} - \frac{1}{20053}$ =) z  $\cos 2(z - \cos 3) - \sin 2 \sin 3$ 22-22:0053+1 Applying property  $= \frac{27/2 \left[ \cos_2 \left( \frac{2}{2} - \cos_3 \right) - \sin_2 \sin_3 \right]}{2^2 - 42 \left[ \cos_3 + 4 \right]}$  $= 27[\cos 2(\frac{7}{2} - \cos 3) - \sin 2\sin 3]$   $2^{2} - 47\cos 3 + 4$ ROC=) |3/2/) | 12/22

(B) 
$$f(k) = \sin(k + \pi) + \pi$$

(B)  $f(k) = \sin(k + \pi) + \pi$ 

(C)  $f(k) = \int_{k=0}^{\infty} f(k) e^{-k}$ 

(S)  $f(k) = \int_{$