Nan		Prin	ited Pa	ges:
Stuc	dent University Roll No.:			
	School of Engineering			
	Second Theory Sessional Examina	ation		
	Odd Semester (AS: 2024-25)			777
B. T	ech: All Branches [Year: II]		Semest	er: 111
Course Title: Complex Analysis and Integral Transforms Course Code: NBS 4301			Max M Time: 1	arks. 30
	uctions if any: Read the question Carefully.	. 10.04.8	Now he to	
NEW TO SERVICE STREET	SECTION 'A'	rest to the	ourse	Mark
ON	1. Attempt all parts of the following:	11 3 6.50	jective	1
a)	Write the Z- Transform of sequence $\{f_k\}$.	CO 4		
		CO.3		1
b)	Prove that $L\{1\} = \frac{1}{s}$.	CO 4		1
c)	State the Fourier Integral.		03	1
d)	Evaluate $L\{t^3e^{-3t}\}$.	+		1
e)	Evaluate $L^{-1}\left\{\frac{1}{s+a}\right\}$.	CO 3	A STANDER SA	
5)	SECTION 'B'	Sk (*CSQCFX5QC5/559	urse	Marks
	2. Attempt any two parts of the following:	Obj	jective	Part Control
Q.N.	2. Attempt any two parts 52.		10.2	7.5
-1/	Using Convolution theorem evaluate	CO 3		1.0
a)	$L^{-1}\frac{s}{(s^2+1)(s^2+4)}.$			75
b)/	Find the Laplace transform of $\frac{cosat-cosot}{t}$.		203	7.5
c)	Solve by Z- transform:	C	04	7.5
	$y_{k+1} + y_k = 1 \qquad if \ y_0 = 0.$ SECTION 'C'	C	urse	
	SECTION 6	Objective		Marks
Q.N.	3. Attempt any one part of the following:	1000 MARIE	1.74×28.798.916	all Miles
	Express the function $(1 r < 1)$			
a)_	$f(x) = \begin{cases} 1 & x \le 1 \\ 0 & x > 1 \end{cases} $ as a Fourier Integral.	CO4		10
	Hence evaluate $\int_0^\infty \frac{\sin \lambda \cos \lambda x}{\lambda} d\lambda$.			
	The state of the s			
(a)	Solve using Laplace Transform	СОЗ		10
b)	$y''(t) + 4y'(t) + 4y(t) = 6e^{-t}$			10
	y(0) = -2, y'(0) = 8.			
c)	Find Fourier Sine Transform of function	CC)4	10
	Number of Course to Course	ns nga)		
COs	(Number of COs may vary from course to cour Questions Numbers Total Marks	36)	the	1124
CO 3	Questions Numbers Total Marks	22	(301	

COs Trantoer of COs may vary from course to course	
Questions Numbers Total Marks	
1 1(0), 1(0) 1(0)	
CO_4 (a) , (b) , (a) , (b) , (b) , (b)	
1(a), 1(c), 2(c), 3(a), 3(c) 29.5	

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