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B.Tech III Year II Semester Supplementary Examinations July-2021																
DIGITAL SIGNAL PROCESSING (Electronics and Communication Engineering)																
Time	a. 3	hours			(Licen	omes	and C	John	incati		ignieci	mg)	М	ov Mo	rka. 60	)
1 11110		nours			( )		11 E.	o I Init	a 5 m 1	2 - 6			1016	a <b>.</b> 1 <b>1</b> 1a	IKS. UU	,
					(An	swer a			5 5 X I T-I	2 - 0	0 Mar	KS)				
1	a	State a	nd pro	ve foll	lowing	g prop	erties	of DF	T:							7M
	i) Linearity ii) Circular time shifting iii) Circular frequency shifting.							<b>7</b> 3 <b>7</b>								
	D	$x^{2(n)}=$	1.5,1	.3 us	sing co	nvoiu	ric cir	cles m	ethod.	quenc	es x1(	n)-{1	,2,3,4	},		211
		. ,	( ) )	, ,	0			OI	R							
2	a L	Find 4	-point ]	DFT o	of the s	sequen	ice x(1	n)= $\{1, \dots, n\}$	6,4,3}		ia atat	: a / day		1:	1	7M
	D	linear.	time w	ariant/	'invari	ant. ca	syster ausal/i	n y(n) non-ca	usal, s	x(n) ] stable/	unstat	ole.	iamic,	Intear	/non-	2111
								UNIT	Г-П							
3	a	How d	o you d	compu	ite DF	T usin	g the	Goert	zel Alg	gorith	m.					7M
	b	Compa	are DF	Γ and	FFT a	lgorith	nms.		,							5M
4	a	Explai	n Radiz	x-4 FF	T algo	orithm	in de	cimati	<b>«</b> on in 1	time d	omair	l.				7M
	b	Interpr	et the a	applica	ations	of FF	Г algo	orithm.								5M
								UNIT	'-III							
5	a Realize system with following difference equation in Parallel form. y(n) = (3/4) y(n-1) = (1/8) y(n-2) + y(n) + (1/3) y(n-1)							6M								
	<b>b</b> Discuss frequency sampling structure for FIR filter.							6M								
	OR															
6	<b>a</b> Determine the direct form realization of FIR with system function $H(Z) = 1 + 2Z^{-1} - 3Z^{-2} - 4Z^{-3} + 5Z^{-4}$									<b>4M</b>						
	b	Explain	n lattic	e & la	ttice-la	adder	struct	ure for	r IIR d	igital	filter.					<b>8M</b>
								UNIT	'-IV							
7	a .	Explain Disting	n the fr	equen	cy trai	nsforn	nation	in ana	alog fi	lters.						7M
	D.	Disting	guish tr	ie But	terwoi	th and	i Chei	oysnev OF	inter R	s.						<b>5</b> IVI
8	a	Discus	s the fr	equen	cy sel	ective	filters	s with	plot.							5M
	b	Given	specif	ication	ns αp	=1 dl	B; αs	= 300	dB; Ω	2p= 2	.00rad	/sec;	$\Omega s=6$	00 rac	d/sec.	7 <b>M</b>
		Detern	nne the	eorde	r the h	ner.		UNIT	r-V							
9	a	Explain	n about	the R	ectang	gular v	vindo	w of th	he FIR	filter						6M
	b	Design	a linea	ar pha	se FIR	filter	using	, frequ	ency s	ampli	ng me	thod.				6M
10	De	sign a	FIR los	v nass	filter	satisf	ving t	OF he foll	<b>k</b> owing	sneci	ficatio	ons ar	o<0.1.¢	dB· as	>44 0	12M
	dB	; wp=2	20rad/s	ec;@s	=600 r	ad/sec	and	ωsf=1	00rad	/sec.				, wo <u>-</u>		

\*\*\* END \*\*\*