University of Mumbai
Examination 2020 under cluster 4 (PCE)

Program: BE Computer Engineering
Curriculum Scheme: R12
Examination: Final Year Semester VII
Course Code: CPC701 and Course Name: DSP
Time: 1 hour Max. Marks: 50

Q=QUESTION	question_description	question_explanation	question_type	question_difficulty
A=ANSWER	answer_description	answer_explanation	answer_isright	answer_position
Q	Time shifting of discrete time signal means_____.		L	
A	y[n] = x[n-k]		1	
A	y[n] = x[-n-k]		0	
A	y[n] = -x[-n-k]		0	
A	y[n] = x[-n]		0	
Q	Which property is exhibited by the auto-correlation function of a complex valued signal?		L	
A	Commutative property		0	
A	Distributive property		0	
A	Conjugate property		1	
A	Associative property		0	
Q	Under which conditions does an initially relaxed system become unstable?		L	
A	Only if bounded input generates unbounded output		0	
A	Only if bounded input generates bounded output		1	
A	Only if unbounded input generates unbounded output		0	
A	Only if unbounded input generates bounded output		0	

Q	A LTI system is said to be initially relaxed system only if _____.		M	
A	Zero input produces zero output		1	
A	Zero input produces non-zero output		0	
A	Zero input produces an output equal to unity		0	
A	Zero input provide infinite output		0	
Q	The function given by the equation x(n)=1, for n=0; x(n)=0, for n≠0 is a _____.		M	
A	Step function		0	
A	Ramp function		0	
A	Triangular function		0	
A	Impulse function		1	
Q	Which of the following should be done in order to convert a continuous-time signal to a discrete-time signal?		H	
A	Sampling		1	
A	Differentiating		0	
A	Integrating		0	
A	Convolution		0	
Q	A discrete time signal has _____.		H	
A	Continuous time continuous amplitude		0	
A	Continuous time discrete amplitude		0	
A	Discrete time continuous amplitude		0	
A	Discrete time discrete amplitude		1	
Q	Under which conditions does an initially relaxed system become unstable?		L	
A	only if bounded input generates unbounded output		1	
A	only if bounded input generates bounded output		0	
A	only if unbounded input generates unbounded output		0	
A	only if unbounded input generates bounded output		0	
Q	A system is said to be defined as non causal, when		L	

A	the output at the present depends on the input at an earlier time		0	
A	the output at the present does not depend on the factor of time at all		0	
A	the output at the present depends on the input at the future time only		0	
A	the output at the present depends on the input at present ,past and future time		1	
Q	Which one of the following systems is dynamic system?		M	
A	y(n)=4x(n)		0	
A	y(n)=logx(n)		0	
A	y(n)=Acosx(n)		0	
A	y(n)=x(n)+x(n-1)		1	
Q	The system characterized by equation y(n)=ax(n)+b is		H	
A	Linear for any value of b		0	
A	Linear if b>0		0	
A	Linear if b<0		0	
A	Non-linear		1	
Q	Which of the following is unstable system?		H	
A	y(n)=ex(n)		0	
A	y(n)=ax(n)+6		0	
A	y(n)=cosx(n)		0	
A	y(n)=x(n)+u(n)		1	
Q	What is the steady state value of The DT signal F (t), if it is known that F(s) = 1/((s+2)2(s+4))?		H	
A	Jan-16		0	
B	32		0	
C	0		1	
D	01-Aug		0	
Q	Given that S1 and S2 are two discrete time systems. The false statements are		L	

A	If S1 and S2 are linear, then S is linear		0	
B	If S1 and S2 are non-linear, then S is non-linear		1	
C	If S1 and S2 are causal, then S is causal		0	
D	If S1 and S2 are time invariant, then S is time invariant		0	
Q	Decimation is a process in which the sampling rate is _____.		L	
A	enhanced		0	
B	stable		0	
C	reduced		1	
D	Unpredictable		0	
Q	The product of two even or two odd function is		L	
A	Even		1	
B	odd		0	
C	prime		0	
D	aliasing		0	
Q	The computational procedure for Decimation in frequency algorithm takes		H	
A	Log2 N stages		1	
B	2Log2 N stages		0	
C	Log2 N2 stages		0	
D	Log2 N/2 stages		0	
Q	For 16 point DIT-FFT, number of complex multiplications required are		L	
A	256		0	
A	240		0	
A	32		1	
A	64		0	
Q	The number of stages in the computation of 32-point DFT by radix -2 DIT FFT is		M	
A	2		0	
A	3		0	

A	4		0	
A	5		1	
Q	Using radix 2, what is IFFT of X(k)={3, 1}		L	
A	{4, -2}		0	
A	{2, 1}		1	
A	{4, 2}		0	
A	{1, 2}		0	
Q	What is the value of x(n)*h(n), 0≤n≤11 for the sequences x(n)={1,2,0,-3,4,2,-1,1,-2,3,2,1,-3} and h(n)={1,1,1} if we perform using overlap save fast convolution technique?		M	
A	{1,3,3,-1,1,3,5,2,-2,2,3,6}		1	
A	{1,2,0,-3,4,2,-1,1,-2,3,2,1,-3}		0	
A	{1,2,0,3,4,2,1,1,2,3,2,1,3}		0	
A	{1,3,3,1,1,3,5,2,2,2,3,6}		0	
Q	Overlap-Save Method we Insert…….zeros at the beginning of the input sequence x(n).		L	
A	M + N-1		0	
A	M + 1		0	
A	M − 1		1	
A	N-1		0	
Q	TMS 320C54x DSP processor consist of _____ ALU.		L	
A	32 bit		0	
A	64 bit		0	
A	40 bit		1	
A	128 bit		0	
Q	The C54xx DSP has a _____ deep instruction pipeline. These stages of the pipeline are independent of each other, which allows overlapping execution of instructions.		M	
A	three - level		0	
A	six-level		1	
A	eight - level		0	

A	two - level		0	
Q	As a application of DSP processor in medical science , a _____ is used to eliminate 60 Hz interference in electrocardiography (ECG) signal.		L	
A	digital high pass filter		0	
A	digital notch filter		1	
A	digital low pass filter		0	
A	All pass filter		0	