Program: BE Electrical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: EEC603 and Course Name: Signal Processing

Time: 1hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	Example of Non - Linear System
Option A:	Y(n) = X(n)+ X(n-1)+X(n-2)
Option B:	Y(n) = n X(n)
Option C:	Y(n) = 2X(n)+3
Option D:	Y(n) = 0
Q2.	For each of the following i/p -o/p relationship, determine which signal is non linear.
Option A:	Y(n)=Odd[X(t)]
Option B:	Y(n)=X(n+1)-X(n-1)
Option C:	$Y(t) = t^2 X(t-1)$
Option D:	$Y(n) = X^2(n-2)$
Q3.	Find the property of Z transform a x(n) + b y(n) -->a X(Z) + b Y (Z)
Option A:	convolution
Option B:	Time shifting property
Option C:	multiplication
Option D:	Linearity Property
Q4.	The ratio of z-transform output to z-transform input is known as
Option A:	output function
Option B:	power series
Option C:	Transfer function
Option D:	input function
Q5.	If x(n)is a finite duration anti-causal sequence or left sided sequence, then the ROC is entire Z plane except at
Option A:	z = 0
Option B:	z = ∞
Option C:	|z| < r
Option D:	|z|> a
Q6.	A causal stable system H with transfer function H(z) is called mixed phase when

Option A:	zeroes are situated on the insides of a unit circle
Option B:	zeroes are situated on the outside of a unit circle
Option C:	one zero are situated on the inside and outside of a unit circle
Option D:	zeroes are situated on the unit circle
Q7.	For a difference equation the magnitude response is given by
Option A:	H(w)*H(w)
Option B:	H(w)^-1
Option C:	|H(w)|
Option D:	H(w)
Q8.	Fourier analysis converts a signal from
Option A:	Frequency to time
Option B:	Time to frequency
Option C:	Sequence to samples
Option D:	Samples to sequence
Q9.	FFT algorithm depends upon:
Option A:	Multiplication
Option B:	Subtraction
Option C:	Factorization
Option D:	Division
Q10.	Inverse Fourier transform is conversion of:
Option A:	F(w) -> f(x)
Option B:	F(w) <-> f(x)
Option C:	f(x) -> F(w)
Option D:	f(x) <-> F(w)
Q11.	The time delay of the signal through a device under test
Option A:	phase delay
Option B:	time delay
Option C:	group delay
Option D:	noise delay
Q12.	The delay in seconds experienced by the sinusoidal component of input signal is
Option A:	phase delay
Option B:	time delay
Option C:	group delay
Option D:	noise delay
Q13.	IIR filter specifications include
Option A:	Only magnitude response characteristics
Option B:	Only phase response characteristics
Option C:	Both magnitude and phase response characteristics
Option D:	Neither magnitude nor frequency response characteristics

Q14.	The signal Y(t) = e x(t) is
Option A:	Memoryless
Option B:	Stable
Option C:	Causal
Option D:	Time variant
Q15.	Signal X(t) = e^(-3t) u(t), Energy of given Signal is
Option A:	1/2
Option B:	1/4
Option C:	1/9
Option D:	1/16
Q16.	The Z-Transform is
Option A:	infinite power series
Option B:	finite power series
Option C:	only causal signal
Option D:	only non causal signal
Q17.	A general differential equation in its simplest form has
Option A:	one dependent variable
Option B:	more than one dependent variable
Option C:	one independent variable
Option D:	more than one independent variable
Q18.	For all pass system the poles and zeros should be
Option A:	conjugate reciprocal pair
Option B:	complex conjugate pair
Option C:	unity
Option D:	real and simple
Q19.	Limits of Inverse DTFT is:
Option A:	0 to ∏
Option B:	-∏ to 0
Option C:	-∏ to ∏
Option D:	∏ to ∞
Q20.	Efficient realization of FIR filter can be done by
Option A:	Recursively
Option B:	Non recursively
Option C:	Recursively & Non recursively
Option D:	Neither Recursively nor Non-recursively
Q21.	A band-limited signal with a maximum frequency of 5 kHz is to be sampled. According to the sampling theorem, the sampling frequency in kHz
Option A:	5

Option B:	10
Option C:	15
Option D:	20
Q22.	Find Z-Transform of x[n] = [1/4]^n * u[n]
Option A:	4z/[4z-1]
Option B:	z/[4z-1]
Option C:	z/[z-4]
Option D:	4z/[z-1]
Q23.	What is the assumption when the solution needed is Forced Response?
Option A:	Input is zero
Option B:	Input is given and initial conditions are zero
Option C:	Natural Response
Option D:	Input is given and initial conditions are non-zero
Q24.	DTFT signals are periodic with period
Option A:	1
Option B:	∏
Option C:	3∏
Option D:	2∏
Q25.	The minimum stop band attenuation for Hamming window is
Option A:	—54dB
Option B:	—53dB
Option C:	—52dB
Option D:	—51dB

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	D
Q3.	D
Q4	C
Q5	B
Q6	C
Q7	C
Q8.	B
Q9.	C
Q10.	A
Q11.	C
Q12.	A
Q13.	A
Q14.	D
Q15.	C
Q16.	A
Q17.	C

Q18.	A
Q19.	C
Q20.	C
Q21.	B
Q22.	A
Q23.	B
Q24.	D
Q25.	B