Program: BE Electronics & Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: ECC504 and Course Name: Discrete Time 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.	What is the value of complex multiplication required to compute DFT for N=8?
Option A:	56
Option B:	64
Option C:	32
Option D:	16
Q2.	$\boldsymbol{W_N^{k+N/2}} = ?$
Option A:	W_N^k
Option B:	$-W_N^k$
Option C:	W_N^{-k}
Option D:	$-W_N^{-k}$
Q3.	x(n)*δ(n-k) =?
Option A:	x(n)
Option B:	δ(n)
Option C:	X(K)*δ(n-k)
Option D:	X(K)*δ(k)
Q4.	In Overlap save method of long sequence filtering, what is the length of the input sequence block?
Option A:	L+M-1
Option B:	L+M
Option C:	L
Option D:	L-M-1
Q5.	Calculate DFT of x (n)= ∂(n).
Option A:	-J
Option B:	-1
Option C:	J
Option D:	1

Q6.	The transformation technique in which there is one to one mapping from s-domain to z-domain is
Option A:	Approximation of derivatives
Option B:	Impulse invariance method
Option C:	Bilinear transformation method
Option D:	Backward difference for the derivative
Q7.	Which of the following method is used to convert Analog filter into IIR Digital filter?
Option A:	Butterworth Method
Option B:	Windowing Method
Option C:	Bilinear Transformation Method
Option D:	Sampling Method
Q8.	Which of the following filters cannot be designed using impulse invariance method?
Option A:	Low pass
Option B:	Band pass
Option C:	Low pass and band pass
Option D:	High pass
Q9.	Which of the following methods are not used in IIR filter design?
Option A:	Approximation of Derivatives
Option B:	Bilinear transformation
Option C:	Impulse invariance
Option D:	Window method
Q10.	In IIR Filter design by the Bilinear Transformation, the Bilinear Transformation is a mapping from
Option A:	Z-plane to S-plane
Option B:	S-plane to Z-plane
Option C:	S-plane to J-plane
Option D:	J-plane to Z-plane
Q11.	The poles of Chebyshev filter are found to lie on:
Option A:	Circle
Option B:	Parabola
Option C:	Hyperbola
Option D:	Ellipse
Q12.	FIR filter is -------.
Option A:	stable
Option B:	causal
Option C:	stable and causal
Option D:	stable and non causal
Q13.	What is the width of the main lobe of the frequency response of a rectangular window of length M-1=7?

Option A:	π/8
Option B:	2π/8
Option C:	4π/8
Option D:	4π/7
Q14.	Which of the following windows has a time domain sequence $h(n) = \frac{1}{2}(1 - cos\frac{2\pi n}{M-1})$?
Option A:	Bartlett window
Option B:	Blackman window
Option C:	Rectangular window
Option D:	Hanning window
Q15.	**For the T.F $(Z)\frac{Z}{Z-0.9}$, Which of the following statement is correct?**
Option A:	The system is maximum phase system
Option B:	The system is minimum phase system
Option C:	The system is all pass system
Option D:	The system is mixed phase system
Q16.	The large side lobes of w(ω) results in which of the following undesirable effects?
Option A:	Circling effects
Option B:	Broadening effects
Option C:	Ringing effects
Option D:	Frequency warping
Q17.	Which is a quantization process?
Option A:	Rounding
Option B:	Truncation
Option C:	Rounding & Truncation
Option D:	Rounding and sampling
Q18.	What is the type of quantizer, if a Zero is assigned a quantization level?
Option A:	Midrise type
Option B:	Mid tread type
Option C:	Mistreat type
Option D:	None of the mentioned
Q19.	Which of the effect is not caused by finite word length?
Option A:	Coefficient Quantization error
Option B:	Limit Cycle
Option C:	Round off noise
Option D:	Inter Symbol Interference
Q20.	The coefficient quantization error can be minimized by realizing
Option A:	Higher order filter with either single pole or double pole filter sections.
Option B:	Lower order filter with either single pole or double pole filter sections.
Option C:	Can't be minimized

Option D:	Lower order filter with only single pole filter sections
Q21.	Dynamic range of Fixed-point Implementation is
Option A:	Limited
Option B:	Large
Option C:	Moderate
Option D:	Very High
Q22.	Which of the following is not the part of math processing unit of DSP?
Option A:	Multiplier
Option B:	Barrel shifter
Option C:	ALU
Option D:	Data memory
Q23.	A DSP is a type of microprocessor, which is
Option A:	Incredibly fast but less powerful than 8086
Option B:	Incredibly fast and powerful than 8086
Option C:	Slower but powerful than 8086
Option D:	Slower but powerful than 8085
Q24.	Which one is the common variable for EEG & ECG?
Option A:	Time
Option B:	Special coordinates
Option C:	Pressure
Option D:	Temperature
Q25.	DTMF means
Option A:	Double Tone Multifrequency Detection
Option B:	Dual Tone Multifrequency Detection
Option C:	Double Tone Multiple Detection
Option D:	Dual Tone Multiple Detection