

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: CSC701 and Course Name: Digital Signal & Image Processing

Time: 1 hour

Max. Marks: 50

=====

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

Q1.	If the output of the system of the system at any 'n' depends only the present or the past values of the inputs then the system is said to be:
Option A:	Linear
Option B:	Non-Linear
Option C:	Causal
Option D:	Non-causal
Q2.	Which of the following should be done in order to convert a continuous-time signal to a discrete-time signal?
Option A:	Sampling
Option B:	Differentiating
Option C:	Integrating
Option D:	Quantization
Q3.	Which block of the discrete time systems requires memory in order to store the previous input?
Option A:	Adder
Option B:	Signal Multiplier
Option C:	Unit Delay
Option D:	Unit Advance
Q4.	The interface between an analog signal and a digital processor is
Option A:	D/A converter
Option B:	A/D converter
Option C:	Modulator
Option D:	Demodulator
Q5.	If 'F' is the frequency of the analog signal, then what is the minimum sampling rate required to avoid aliasing?
Option A:	F
Option B:	2F
Option C:	3F
Option D:	4F
Q6.	The circular convolution of two sequences in time domain is equivalent to

Option A:	Multiplication of DFTs of two sequences
Option B:	Summation of DFTs of two sequences
Option C:	Difference of DFTs of two sequences
Option D:	Square of multiplication of DFTs of two sequences
Q7.	2D Fourier transform and its inverse are infinitely
Option A:	Aperiodic
Option B:	Periodic
Option C:	Linear
Option D:	Non linear
Q8.	If the DFT $\{x(n)\} = X(k) = \{4, -2j, 0, 2j\}$, using properties of DFT, DFT of $x(-n)$ is
Option A:	$(4, 2j, 0, -2j)$
Option B:	$(2j, 0, -2j, 4)$
Option C:	$(4, 0, 2j, -2j)$
Option D:	$(0, 2j, 4, -2j)$
Q9.	To reduce the effect of aliasing high frequencies are
Option A:	Attenuated
Option B:	Accentuated
Option C:	Reduced
Option D:	Removed
Q10.	DFT of the sequence $x(n) = \{1, -2, 3, 2\}$
Option A:	$\{4, -2+j4, 4, -2+j4\}$
Option B:	$\{4, -2+j4, 4, -2-j4\}$
Option C:	$\{-4, -2-j4, 4, 2-j4\}$
Option D:	$\{4, -2-j4, -4, -2-j4\}$
Q11.	Giving one period of the periodic convolution is called
Option A:	Periodic convolution
Option B:	Aperiodic convolution
Option C:	Correlation
Option D:	Circular convolution
Q12.	DTFT is the representation of
Option A:	Periodic Discrete time signals
Option B:	Aperiodic Discrete time signals
Option C:	Aperiodic continuous signals
Option D:	Periodic continuous signals
Q13.	4- point DFT requires a total of
Option A:	12 multiplications and 10 additions
Option B:	10 multiplications and 8 additions
Option C:	16 multiplications and 12 additions

Option D:	14 multiplications and 12 additions
Q14.	A good representation of the derivative of a step function $u(t)$ is...
Option A:	Another step function
Option B:	A complex exponential
Option C:	A ramp mt , where m is the slope.
Option D:	A delta function $\delta(t)$
Q15.	Refresh rate is measured in
Option A:	mbps
Option B:	hertz
Option C:	kilo hertz
Option D:	mega hertz
Q16.	JPEG format is useful when _____
Option A:	There are so many colors in the picture
Option B:	There are not so many colors in the picture
Option C:	To show more brightness
Option D:	To show haziness
Q17.	Term which refers to the sharpness or clarity of an image, is-----
Option A:	Pitch
Option B:	Pixel
Option C:	Resolution
Option D:	Signal
Q18.	The procedure done on a digital image to alter the values of its individual pixels is
Option A:	Neighborhood Operations
Option B:	Image Registration
Option C:	Geometric Spatial Transformation
Option D:	Single Pixel Operation
Q19.	The technique of Enhancement that has a specified Histogram processed image as result, is called?
Option A:	Histogram Linearization
Option B:	Histogram Equalization
Option C:	Histogram Matching
Option D:	Histogram Linear Processing
Q20.	Using gray-level transformation, the basic function linearity deals with which of the following transformation?
Option A:	Log and inverse-log transformations
Option B:	Negative and identity transformations
Option C:	n th and n th root transformations
Option D:	Power-law transformations

Q21.	In terms of image enhancement, what does mean and variance refers to?
Option A:	Average contrast and average gray level respectively
Option B:	Average gray level and average contrast respectively
Option C:	Average gray level in both
Option D:	Average contrast in both
Q22.	Histogram equalization is used to
Option A:	Enhance the contrast of an image
Option B:	Remove the noises present in an image
Option C:	Find the contours present in an image
Option D:	Find the equality present in various regions.
Q23.	Example of Region Growing Methods is
Option A:	Level Set Methods
Option B:	Graph Partitioning Methods
Option C:	Watershed Transformation
Option D:	Neural Networks Segmentation
Q24.	Zero crossing operator use the following
Option A:	First derivative
Option B:	Second derivative
Option C:	Sobel operator
Option D:	Gaussian operator
Q25.	Which segmentation technique is based on clustering approaches?
Option A:	K-means algorithm
Option B:	Threshold based algorithm
Option C:	Histogram based algorithm
Option D:	Edge detection based algorithm