

Program: TE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016/2012

Examination: Third Year Semester VI

Course Code: ECC604 and Course Name: Image Processing and Machine Vision

Time: 1 hour

Max. Marks: 50

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

Q1.	The False Contouring effect will appear in an image due to
Option A:	Insufficient number of Intensity levels in smooth area of digital image
Option B:	Maximum number of Intensity levels in smooth area of digital image
Option C:	Insufficient number of samples in digital image
Option D:	High spatial resolution
Q2.	An image with 256 possible discrete intensity values is called as
Option A:	256 bit image
Option B:	8 bit image
Option C:	16 bit image
Option D:	128 bit image
Q3.	Spatial resolution is a measure of
Option A:	Smallest discriminable detail in the image
Option B:	Smallest discriminable change in the intensity level in the image
Option C:	Light illumination
Option D:	Number of bits used to quantize the intensity
Q4.	The Conversion between RGB and CMY color model is given by
Option A:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$
Option B:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Option C:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Option D:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 2 \\ 2 \\ 2 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Q5.	What is not the property of Discrete Cosine Transform?
Option A:	Energy compaction
Option B:	Unitary and Orthogonal
Option C:	Separable and Symmetric

Option D:	Nonlinear and invertible
Q6.	Walsh-Hadamard Transform is least suitable in which following Application
Option A:	Data Encryption
Option B:	JPEG
Option C:	ECG Processing
Option D:	Enhancement
Q7.	The 2D DCT of Image $I=[2, 3; 1, 0]$
Option A:	[3,0,2,1]
Option B:	[3,0,2,-1]
Option C:	[3,0,-1,2]
Option D:	[3,2,0,-1]
Q8.	If $f(x,y)$ is imaginary than its Fourier Transform is
Option A:	Conjugate Symmetry
Option B:	Hermitian
Option C:	Anti-Hermitian
Option D:	Symmetry
Q9.	Shrinking of image can be done using
Option A:	pixel replication
Option B:	bi-cubic interpolation
Option C:	bilinear interpolation
Option D:	row column deletion
Q10.	A mask of size 3*3 is formed using Laplacian including diagonal neighbors that has central coefficient as 9. Then what would be central coefficient of same mask if it is made without diagonal neighbors?
Option A:	5
Option B:	-5
Option C:	8
Option D:	-8
Q11.	Noise with Gaussian pdf is introduced by
Option A:	Faulty components
Option B:	Quantization
Option C:	Thermal noise
Option D:	Atmospheric disturbances
Q12.	Salt & pepper noise is due to
Option A:	Quantization
Option B:	Sensor
Option C:	Faulty components
Option D:	Atmospheric turbulence

Q13.	Rayleigh noise distribution is
Option A:	Symmetric
Option B:	Asymmetric
Option C:	Same as gaussian
Option D:	Exponential in nature
Q14.	Difference between the original image and the eroded one creates
Option A:	More grey levels
Option B:	Less grey levels
Option C:	Boundary
Option D:	Unfilled regions
Q15.	What does the total number of pixels in the region defines?
Option A:	Perimeter
Option B:	Area
Option C:	Intensity
Option D:	Brightness
Q16.	Canny's edge detection algorithm is based on:
Option A:	Ideal model
Option B:	Step edge
Option C:	Real model
Option D:	Smoothing model
Q17.	If an image contains K disjoint regions, what does the union of all the regions represent?
Option A:	Background
Option B:	Foreground
Option C:	Outer Border
Option D:	Inner Border
Q18.	Which of the following components must an Object recognition system have
Option A:	Feature Detector
Option B:	Histogram Analyzer
Option C:	Thresholder
Option D:	Binarizer
Q19.	SVM is fundamentally which of the following algorithm
Option A:	Binary
Option B:	Recursive
Option C:	non recursive
Option D:	Random
Q20.	K-Means clustering is which of the following procedures
Option A:	Hierarchical
Option B:	Non hierarchical

Option C:	Random
Option D:	Serial
Q21.	Which of the following is the second step in cluster Analysis
Option A:	Selecting Distance measure
Option B:	Validating Analysis
Option C:	Selecting clustering algorithm
Option D:	Selecting number of clusters
Q22.	The basic idea in classification is to recognize objects based on which one of the following
Option A:	Color
Option B:	Position
Option C:	Size
Option D:	features in general
Q23.	Feature detection for object recognition does not rely mainly on which of the following types of features
Option A:	Global
Option B:	Local
Option C:	Relational
Option D:	Hypothetical
Q24.	Which type of model does a Model-based methods for texture analysis used to characterize
Option A:	Analytical
Option B:	Logical
Option C:	Statistical
Option D:	Random
Q25.	SVMs are which type of classification techniques
Option A:	Supervised
Option B:	Unsupervised
Option C:	Logical
Option D:	Theoretical