

Program: BE **ELECTRONICS AND TELECOMMUNICATION** Engineering

Curriculum Scheme: **Revised 2016**

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 difference in intensity between the highest and the lowest intensity levels in an image is _____
Option A:	Noise
Option B:	Contrast
Option C:	Saturation
Option D:	Brightness
Q2.	Digitization of spatial co-ordinates (x,y)is called
Option A:	gray level quantization
Option B:	finite sampling
Option C:	image sampling
Option D:	image quantization
Q3.	Human perception of color closely resembles the _____ color model
Option A:	CMY
Option B:	RGB
Option C:	HSI
Option D:	CMYK
Q4.	DFT 4by 4 matrix is given by
Option A:	$\frac{1}{\sqrt{4}} \begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & -j & -1 & j \\ 1 & -1 & 1 & -1 \\ 1 & j & -1 & -j \end{bmatrix}$
Option B:	$\frac{1}{\sqrt{4}} \begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & j & -1 & -j \\ 1 & -1 & 1 & -1 \\ 1 & -j & -1 & j \end{bmatrix}$
Option C:	$\frac{1}{\sqrt{4}} \begin{bmatrix} 1 & -1 & 1 & -1 \\ 1 & -j & -1 & j \\ 1 & -1 & 1 & -1 \\ 1 & j & -1 & -j \end{bmatrix}$

Option D:	$\frac{1}{\sqrt{4}} \begin{bmatrix} 1 & 1 & -1 & -1 \\ 1 & -j & -1 & j \\ 1 & -1 & 1 & -1 \\ 1 & j & -1 & -j \end{bmatrix}$
Q5.	DCT stands for
Option A:	Discrete Cosine Transform
Option B:	Distance Cost Transform
Option C:	Discrete Cost Transform
Option D:	Distance Cosine Transform
Q6.	Which of the following is not a real Image Transform?
Option A:	DCT
Option B:	DFT
Option C:	Hadamard Transform
Option D:	Walsh Transform
Q7.	For an Image of size 2×2,number of basis images are
Option A:	0
Option B:	2
Option C:	1
Option D:	4
Q8.	for coordinates p(2,3)the 4 neighbors of pixel p are
Option A:	(3,3)(2,3)(1,3)(1,3)
Option B:	(3,3)(2,3)(1,1)(2,2)
Option C:	(3,3)(2,4)(1,3)(2,2)
Option D:	(3,3)(2,4)(1,3)(2,1)
Q9.	Final step of enhancement lies in _____ of the sharpened image.
Option A:	Increase range of contrast
Option B:	Increase range of brightness
Option C:	Increase dynamic range
Option D:	Decrease dynamic range
Q10.	A median filter is useful for filtering ----- noise.
Option A:	white
Option B:	Gaussian
Option C:	Rayleigh
Option D:	Salt and Pepper noise
Q11.	Digital negative is used to convert ----- pixels into bright pixels.
Option A:	Dark
Option B:	Bright
Option C:	color
Option D:	noise

Q12.	Advantages of canny operator
Option A:	Simplicity of the method
Option B:	Large computations
Option C:	High error probability
Option D:	Less accuracy
Q13.	image restoration is to improve the _____ of the image
Option A:	quality
Option B:	noise
Option C:	intensity
Option D:	color
Q14.	In morphology, structuring element is a _____
Option A:	pixel
Option B:	color
Option C:	background
Option D:	mask
Q15.	For line detection we use mask that is
Option A:	Gaussian
Option B:	Laplacian
Option C:	ideal
Option D:	Butterworth
Q16.	If the inner region of the object is textured then approach we use is
Option A:	discontinuity
Option B:	similarity
Option C:	extraction
Option D:	recognition
Q17.	$R_i$ is a connected set, where $i$ is
Option A:	1,2,3,4
Option B:	1,2,3...10
Option C:	1,2,3...50
Option D:	1,2,3...n
Q18.	For noise reduction we use
Option A:	image smoothing
Option B:	image contouring
Option C:	image enhancement
Option D:	image recognition
Q19.	Computation of derivatives in segmentation is also called
Option A:	spatial filtering

Option B:	frequency filtering
Option C:	low pass filtering
Option D:	high pass filtering
Q20.	For which of the following regions, compactness is minimal?
Option A:	Rectangle
Option B:	Square
Option C:	Irregular
Option D:	Disk
Q21.	Which of the following is the useful descriptor of a boundary, whose value is given by the ratio of length of the major axis to the minor axis?
Option A:	Radius
Option B:	Perimeter
Option C:	Area
Option D:	Eccentricity
Q22.	Based on the 4-directional code, the first difference of smallest magnitude is called as:
Option A:	Shape number
Option B:	Chain number
Option C:	Difference
Option D:	Difference number
Q23.	Which of the following techniques of boundary descriptions have the physical interpretation of boundary shape?
Option A:	Fourier transform
Option B:	Statistical moments
Option C:	Laplace transform
Option D:	Curvature
Q24.	Which of the following statement is TRUE?
Option A:	Statistical moment is sensitive to rotation.
Option B:	central moment is sensitive to rotation.
Option C:	Statistical moment is insensitive to rotation.
Option D:	Statistical moment is sensitive to translation.
Q25.	What is the order of the shape number of a rectangular boundary with the dimensions of 3×3?
Option A:	3
Option B:	6
Option C:	9
Option D:	12