

CBCS SCHEME - Make-Up Exam

USN

BAI515A

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025
Computer Vision

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. *M* : Marks , *L*: Bloom's level , *C*: Course outcomes.

Module – 1			M	L	C
Q.1	a.	What is computer vision and explain its real world applications.	06	L1	CO1
	b.	Demonstrate a model of photometric image formation.	08	L2	CO1
	c.	Explain diffuse and specular reflection.	06	L2	CO1
OR					
Q.2	a.	Illustrate image sensing pipeline with block diagram.	08	L2	CO1
	b.	Define (i) MSE (ii) RMS (ii) PSNR	06	L1	CO1
	c.	Explain Histogram Equalization (HE).	06	L2	CO1
Module – 2					
Q.3	a.	Illustrate dilation, erosion, opening and closing of binary image morphology.	08	L2	CO2
	b.	Outline some useful properties of Fourier transforms on computer vision.	06	L2	CO2
	c.	List and explain Fourier transform pairs.	06	L2	CO2
OR					
Q.4	a.	Explain basic set of 2D geometric image transformation.	08	L2	CO3
	b.	Infer forward warping (or forward mapping) and inverse warping with algorithm.	12	L2	CO3
Module – 3					
Q.5	a.	Explain a model of image degradation/restoration process with block diagram.	06	L2	CO3
	b.	Discuss Rayleigh noise probability density function.	06	L2	CO3
	c.	Compare arithmetic, geometric, harmonic and contraharmonic mean filters.	08	L2	CO3
OR					
Q.6	a.	Discover optimum global thresholding using Otsu's method.	10	L2	CO4
	b.	Explain segmentation by region growing and region splitting and merging.	10	L2	CO4

1 of 2

Module – 4

Q.7	a.	Explain Model converting colors from RGB to HSI and from HSI to RGB.	12	L3	CO4
	b.	Explain intensity slicing technique with graphical interpretation.	08	L2	CO4

OR

Q.8	a.	Illustrate color image smoothing and sharpening.	10	L2	CO4
	b.	How make use of colors in image segmentation.	10	L1	CO4

Module – 5

Q.9	a.	Demonstrate boundary extraction and-hole filling in morphological image processing.	10	L2	CO5
	b.	Explain how chain codes are used to represent a boundary by a connected sequence of straight line segments of specified length and direction.	10	L2	CO5

OR

Q.10	a.	Explain Recall pattern classification. Explain minimum distance classifier.	12	L1	CO5
	b.	Explain the following : (i) Pattern Vectors (ii) Structural Patterns	08	L2	CO5
