USN | | | | | | | | | |

BCS613B

Sixth 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.		Define computer vision. Explain in detail the applications of computer vision.	10	L1,2	CO1
	b.		Explain bidirectional reflectance distribution function (BRDF) along with diffusion and specular reflection.	10	L2	CO1
			OR			
Q.2	a.		With neat diagram explain the working digital camera.	10	L2	CO1
	b.		Explain the basic steps of image processing with block diagram.	10	L1,2	CO1
			Module – 2			
Q.3	a.		Explain 2D and 3D transforms with basic 2D planar transformation diagram.	10	L2	CO2
	b.		Discuss the operation of Fourier transformer to analyze the frequency characteristics of various filters with its properties.	10	L3	CO2
			OR			
Q.4	a.		Explain more neighborhood operators in digital image processing.	10	L2	CO2
	b.		Explain in detail pyramids and Wavelets.	10	L2	CO2
			Module – 3			
Q.5	a.		Explain in detail amodel of Image degradation / restoration process.	10	L2	CO3
	b.		Explain in detail print, line, edge detection and thresholding.	10	L2	CO3
			OR			
Q.6	a.		Explain in detail periodic noise reduction by frequency domain filtering.	10	L3	CO3
	b.		Explain Image Segmentation by region growing and region splitting and merging.	10	L2	CO2
			Module – 4			
Q.7	a.		Explain different color models used in image processing. Compare RGB and HSV models.	10	L2	CO4
	b.		Explain in detail color transformations.	10	L2	CO4
			OR			
Q.8	a.		Explain color image smoothing and sharpening.	10	L2	CO4
	b.		Summarize color in image segmentation and noise in color images.	10	L2	CO4
			Module – 5			
Q.9	a.		Explain in detail different morphological image processing operations.	10	L2	CO5
	b.		Explain in detail feature extraction with Boundary processing.	10	L3	CO5
			OR			
Q.10	a.		Explain different morphological algorithms.	10	L3	CO5
	b.		Explain in detail Image Pattern classification by prototype matching.	10	L3	CO5

* * * * *