Reg. No. | | | | | | | | |

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., COMPUTER SCIENCE

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
V	PART - III	CORE ELECTIVE-1	U23CS5E1A	IMAGE PROCESSING

Date & Session: 08.11.2025/FN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	A system is a _____ system if its input-output characteristics do not change with time. a) Linear b) shift-invariant c) non linear d) shift-variant
CO1	K2	2.	Linear and circular convolution cannot be computed through _____ method. a) Graphical method b) X-transform method c) Z-transform method d) Matrix method
CO2	K1	3.	The computation of Walsh Coefficients involves only _____ operation. a) Multiplication b) Division c) addition and Subtraction d) Modulo
CO2	K2	4.	A KL transform depends on the _____ statistics of the input data. a) Second-order b) First-order c) Third-order d) Fourth-order
CO3	K1	5.	Which is the image processing used to improve the quality of an image? a) Compression b) Segmentation c) Enhancement d) Restoration
CO3	K2	6.	_____ filtering is used to remove the noise at the expense of blurring of the image. a) Low pass b) High Pass c) Median Pass d) Standard Pass
CO4	K1	7.	Which of the following is a primary goal of image compression? a) Increasing image resolution b) Reducing storage space and transmission bandwidth c) Enhancing image contrast d) Adding noise to the image
CO4	K2	8.	Which type of compression allows for perfect reconstruction of the original image data? a) Lossy compression b) Lossless compression c) Irreversible compression d) Spatial compression
CO5	K1	9.	Which of the following is not an image segmentation approach? a) Region b) Boundary c) Edge d) Circle
CO5	K2	10.	Canny edge detector is a/ an _____. a) Isotropic b) Non-isotropic c) Both (a) & (b) d) None of the Above

Course Outcome	Bloom's K-level	Q. No.	**SECTION – B (5 X 5 = 25 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Write about various the applications of Digital Image Processing?
			(OR)
CO1	K3	11b.	Illustrate classification of 2D systems with example.
CO2	K3	12a.	Examine Hadamard transform with suitable example
			(OR)
CO2	K3	12b.	Mention the context of Singular Value Decomposition.
CO3	K4	13a.	Clarify Point Processing concept with an example.
			(OR)
CO3	K4	13b.	What idea applies for homomorphic filters with an example.
CO4	K4	15a.	Examine Thresholding techniques in image segmentation.
			(OR)
CO4	K4	15b.	What you meant by edge Detection and give note on various classifications of edges.
CO5	K5	14a.	Discuss image compression scheme and its classification.
			(OR)
CO5	K5	14b.	Evaluate Transform Based compression.

Course Outcome	Bloom's K-level	Q. No.	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	Draw and Explain the various elements of Digital Image Processing.
			(OR)
CO1	K3	16b.	Illustrate 2D convolution through graphical methods with an example.
CO2	K4	17a.	Investigate any five properties of 2D-DFT.
			(OR)
CO2	K4	17b.	Analyze Discrete Cosine Transform with suitable examples.
CO3	K4	18a.	Examine Histogram processing with an example.
			(OR)
CO3	K4	18b.	Analyze Low Pass Filtering Concept in frequency domain.
CO4	K5	20a.	Discuss Clustering Techniques.
			(OR)
CO4	K5	20b.	Compare any five Edge Detection Techniques.
CO5	K5	19a.	What is huffman coding? Compare binary and non-binary huffman coding.
			(OR)
CO5	K5	19b.	Evaluate Arithmetic coding compression techniques.