

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE  
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023  
DIGITAL IMAGE PROCESSING  
(ECE Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

**PART-A**Answer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) What is are the applications of digital image processing?	[2M]	1	1
	b) List the filters used in frequency domain.	[2M]	2	1
	c) What is the use of inverse filtering?	[2M]	3	1
	d) What is the need for image compressing?	[2M]	4	1
	e) List the various color models in color image processing.	[2M]	5	1

**PART-B**Answer **One Question from each UNIT (5X10=50M)**

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	Explain the fundamental steps and components of an image processing system with neat sketches.	[10M]	1	2
OR				
3.	Discuss about the following: (i) image sensing and acquisition, and (ii) image sampling and quantization	[10M]	1	6
UNIT-II				
4.	a) Explain the Histogram matching process in image processing.	[5M]	2	2
	b) What are the summary of steps for filtering in the frequency domain, explain.	[5M]	2	1
OR				
5.	a) Discuss the smoothing linear filters with relevant equations.	[5M]	2	6
	b) Explain about the Butterworth high pass filters in image sharpening.	[5M]	2	2
UNIT-III				
6.	a) Discuss the model of the image degradation process.	[5M]	3	6
	b) Discuss about Minimum Mean Square Error (Wiener) Filtering.	[5M]	3	6
OR				
7.	a) Explain the Geometric mean filters in image restoration process.	[5M]	3	2
	b) Explain the use of spatial mean filters in image restoration.	[5M]	3	2
UNIT-IV				
8.	a) Explain the fundamental concepts in image compression.	[5M]	4	2
	b) Illustrate the Bit plane coding, Block transform coding for image compression.	[5M]	4	2
OR				
9.	a) Explain in detail about the LZW coding for image compression.	[5M]	4	2

	b)	Explain the run length coding for image compression.	[5M]	4	2
UNIT-V					
10.	a)	Write short notes on various color models.	[5M]	5	1
	b)	Discuss about the transform/subspace methods for color image processing.	[5M]	5	6
OR					
11.	a)	Explain about the Pseudo color image processing methods.	[5M]	5	1
	b)	Discuss the color image smoothing and sharpening.	[5M]	5	6

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