3. i)

ii)

Nan	ne : .	
Roll	No. :	The Design of Committing and Designation
Invi	gilato	or's Signature :
		CS/M.Tech(ECE)/SEM-1/MECE-102/2009-10
		2009
		DIGITAL IMAGE PROCESSING
Tim	e Allo	otted: 3 Hours Full Marks: 70
Can	ıdida	The figures in the margin indicate full marks. tes are required to give their answers in their own words as far as practicable.
		Answer any <i>five</i> of the following. $5 \times 14 = 70$
1.	i)	What is the need for image segmentation?
	ii)	Discuss any two segmentation algorithms in detail. 10
2.	i)	What are the different colour models?
	ii)	Explain HSI colour model in detail.
	iii)	How can a colour image be converted to a gray scale
		image?

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techniques for image compression?

its salient features.

What is image compression? What are the different

Explain Huffman coding with an example and mention

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4.	i)	Explain different methods of contrast enhancement. 7
	ii)	Explain briefly the difference between histogram
		equalization and histogram specification. 7
5.	i)	Explain smoothing filters. what is the difference
		between smoothing filter and median filter? $3 + 4$
	ii)	What are the properties of Hadamard transform matrix ? Write Hadamard transform matrix \boldsymbol{H}_n for
		n = 3. 2 + 3
	iii)	What is the need for gamma correction?
6.	i)	What is pseudo colour image processing? Explain. 6
	ii)	What is Constrained and Unconstrained restoration? 8
7.	Writ	e short notes on any <i>two</i> of the following: 2×7
	i)	Discrete Cosine transform
	ii)	Walsh transform
	iii)	Geometric transformations.