SUBJECT CODE NO:- P-191
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CSE) Examination May/June 2017
Digital Image Processing
(Revised)

[Time: Three Hours]   **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
ii) Attempt any two questions from the remaining questions in each section
iii) Assume suitable data if necessary

Section A

Q.1		Answer the following ?(any five)	10
	1)	Differentiate between continuous and digital image.	
	2)	What is an images model?	
	3)	Define connectivity	
	4)	What is the weighted averaging filter?	
	5)	Define unsharp masking	
	6)	Give transformation function of a butterworth high pass filter	
	7)	What is psychovisual redundancy?	
	8)	Define coding efficiency	
Q.2	a)	Elaborate the components of digital images processing along with its block diagram	08
	b)	Describe the process of image sensing and acquisition	07
Q.3	a)	Explain the different order statistics smoothing filters with suitable example	08
	b)	Discus images sharpening using first order derivative operators	07
Q.4	a)	Explain binary and continuous tone still images compression standard in detail	08
	b)	How does images information measurement play important role in computing coding efficiency in DIP.	07
Q.5		Write short notes on	15
	1)	Variable length coding	
	2)	Log and power –law transformations	
	3)	Smoothing frequency domain filters	

Section –B

Q.6		Answer the following (any five)	10
	a)	What is meant by discontinuity ?	
	b)	Define images segmentation	
	c)	What is point categorization ?	
	d)	How thinning is performed in morphological images processing?	
	e)	What is formulation in color transformations?	
	f)	How is the diameter of a boundary computed?	
	g)	How is the Euler number for polygonal networks calculated?	
	h)	What is region description process?	
Q.7	a)	Design compass gradient operators of the size 3X3 to measure gradients of edges, oriented in eight directions :E, NE, N , NW, W, SW, S and SE give the form of these eight operators using	08

2017

B14A4EB9BA063FCD67423B847B9D35A0

coefficients value 1, 0, or -1 specify the gradient direction of each mask .

	b)	Explain the three types of discontinuities in digital images	07
Q.8	a)	Elaborate the use of structuring element for morphological dilation and erosion purpose along with suitable example of each	08
	b)	Describe the following	07
		I) color slicing	
		ii) Tone and color corrections	
Q.9	a)	Explain how region based segmentation is performed using skeletonization algorithms	08
	b)	Explain the different types of region descriptors required in images description step.	07
Q.10		Write short notes on	15
	a)	Region splitting using quad tree	
	b)	Application of DIP	
	c)	Types of chain codes	

2017