Seat No.: Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER - I • EXAMINATION - WINTER 2012

Sub Tim	ject l ie: 02 truct	code: 712603N Name: Digital Image Processing and Pattern Recognition 2.30 pm – 05.00 pm Total Marks: 70 tions:	
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)		07 07
Q.2	(a)	In image processing, briefly explain with example when we use uniform and	07
	(b)	non-uniform sampling and quantization. Explain following geometrical operations used in image processing with suitable example and application.: (i) Translation (ii) Rotation OR	07
	(b)	Explain in detail GIF file format with merits, demerits and limitations.	07
Q.3	(a)	Prove following 2D-DFT property: (i) Periodicity property (ii) Conjugate symmetry	07
	(b)	"Weighted average filter reduce blurring in the smoothing process." Justify the statement with suitable reason and an example. OR	07
Q.3	(a)	<u>*</u>	07
	(b)	application in image processing. Which domain is more suitable to remove periodic noise? Explain in brief about Band pass and Notch filters to remove periodic noise.	07
Q.4	(a)	Explain in brief about adaptive median filter. For which criteria it works best w.r.t. median filter?	07
	(b)	Explain in detail the RGB color model. What is the Hex number for brightest possible red? OR	07
Q.4	(a)	Explain in brief about coding redundancy. Explain Huffman coding technique	07
Q.4	(b)	with suitable example to remove coding redundancy. Write short note on wavelet transform.	07
Q.5	(a)	Explain following morphological operations used in image processing with suitable example and application.	07
	(b)	laplacian is used to detect edge.	07
0.5	(-)	OR List and explain the steps for basic region-growing algorithm based on	0=
Q.5	(a)(b)	8-connectivity in image segmentation. Explain with example the importance of representation and description in image processing.	07 07
