

Code No: K0521

R07**Set No. 1**

IV B.Tech. II Semester Regular Examinations, April, 2011
IMAGE PROCESSING
(Computer Science & Engineering)

Time: 3 Hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. What is meant by 8-connectivity and 4-connectivity? Develop an algorithm for converting a one-pixel-thick, 8-connected path to a 4-connected path and also explain with an example. [16]
2. Suppose that a digital image is subjected to histogram equalization. Show that a second pass of histogram equalization will produce exactly the same result as the first pass. [16]
3. Discuss about constrained least squares restoration. [16]
4. a) explain about different color models
b) write a short notes on color segmentation? [8 + 8]
5. Explain about different error-free compression techniques with examples. [16]
6. a) write a short notes on hit or miss transformation.
b) explain about thinning and skeletons. [8 +8]
7. a)How Region Growing is done by pixel Aggregation?
b)What is meant by region Splitting and Merging? Explain [8+8]
8. a) Discuss about minimum distance classifier.
b) Explain about Bayes classifier. [8 +8]

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R07**Set No. 2**

IV B.Tech. II Semester Regular Examinations, April, 2011
IMAGE PROCESSING
(Computer Science & Engineering)

Time: 3 Hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. What is meant by m-connectivity and 4-connectivity? Develop an algorithm for converting a one-pixel-thick, m-connected path to a 4-connected path and also explain with an example. [16]
2. Suppose that a digital image is subjected to histogram equalization. Show that a second pass of histogram equalization will produce exactly the same result as the first pass. [16]
3. a) Explain about least mean square filter.
b) Explain about image degradation model. [12 + 4]
4. Explain about pseudo-color image processing [16]
5. Explain about different basic data redundancies with examples. [16]
6. a) Write a short notes on dilation and erosion?
b) Explain about open and closing. [8 + 8]
7. a) Explain about optimal thresholding.
b) Discuss about Global Processing using Hough Transform. [8+8]
8. a) Explain about Optimum Statistical Classifiers.
b) Write short notes on back propagation. [8+ 8]

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R07**Set No. 3**

IV B.Tech. II Semester Regular Examinations, April, 2011
IMAGE PROCESSING
(Computer Science & Engineering)

Time: 3 Hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. What is meant by 8-connectivity and 4-connectivity? Develop an algorithm for converting a one-pixel-thick, 8-connected path to a 4-connected path and also explain with an example. [16]
2. a) Which filters are used for noise reduction and blurring? Explain with examples.
b) What is meant by histogram specification? Explain. [10 + 6]
3. a) Explain how geometric transformations are useful for image restoration.
b) How restoration is done in the presence of the noise? Explain. [10+6]
4. a) Obtain the values of H, S and I from the given R, G, and B? Derive the equations for obtaining HSI values.
b) Explain about full color image processing. [12 +4]
5. Explain about different basic data redundancies with examples. [16]
6. Explain about basic morphological algorithms. [16]
7. Explain about Global Processing using Graph-theoretic Techniques. [16]
8. Explain about the following
a) Matching shape numbers
b) Multilayer feed forward neural networks
c) Back propagation [6 + 6 + 4]

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R07**Set No. 4**

IV B.Tech. II Semester Regular Examinations, April, 2011

IMAGE PROCESSING
(Computer Science & Engineering)**Time: 3 Hours****Max Marks: 80****Answer any FIVE Questions**
All Questions carry equal marks

1. What is meant by m-connectivity and 4-connectivity? Develop an algorithm for converting a one-pixel-thick, m-connected path to a 4-connected path. and also explain with an example. [16]
2. a) Which filters are used for highlight fine details in an image? Explain with examples.
b) What is meant by histogram equalization? Explain. [12+4]
3. a) Explain about wiener filter.
b) How to estimate the degradation function? Give importance of estimating the degradation function. [10+6]
4. a) Obtain the values of R,G, and B from the HSI values? Derive the equation to find the RGB values?
b) Explain about the filtering model for color image processing with neat diagram. [10 +6]
5. Explain about different basic data redundancies with examples. [16]
6. a) What is meant by pruning? Explain with examples.
b) Discuss about the importance of morphology.
c) Explain about how boundary extraction is done using morphology. [8+ 4+ 4]
7. Explain about different techniques for detecting the discontinuities in a digital image. [16]
8. Explain about the following
a) Matching by correlation
b) Optimum Statistical Classifiers
c) Bayes classifier [5+6 +5]