Code No: NR410507 **NR** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
DIGITAL SPEECH AND IMAGE PROCESS
Common to Electronics And Computer Engineering, Computer Science And Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is meant by multispectral thresholding? Explain how this method is useful for image segmentation?
   (b) What is meant by multilevel thresholding? Explain how this method is useful for image segmentation. [8+8]
2. With a brief note on various elements of digital image processing system, explain image acquisition devices in detail. [16]
3. (a) Explain with an example the boundary extraction using morphology operations.
   (b) Write short notes on opening and closing. [8+8]
4. Describe the characteristics and applications of the following filter templates [4+4+4+4]
   (a) $\begin{bmatrix} 0 & -1 & 0 \\ -1 & 4 & -1 \\ 0 & -1 & 0 \end{bmatrix}$
   (b) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
   (c) $\begin{bmatrix} 1 & 3 & 1 \\ 3 & 16 & 3 \\ 1 & 3 & 1 \end{bmatrix}$
   (d) $\begin{bmatrix} -1 & -1 \\ 1 & 1 \end{bmatrix}$
5. Explain the crack edge relaxation technique for edge enhancement. [16]
6. (a) What do you mean by relative address coding?
   (b) Differentiate one dimentional and two dimentional Run length coding.
   (c) What are the advantages of white block skipping? [6+6+4]
7. How statistical coding is differentiated from spatial coding? Give one example for both the coding. Explain. [16]
8. (a) List the steps involved in the generation of histogram for a given input image.

(b) How the image is categorized as [6+10]

i. dark image,
ii. bright image,
iii. low-contrast image and
iv. high contrast image.

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Code No: NR410507 **NR** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
DIGITAL SPEECH AND IMAGE PROCESS
Common to Electronics And Computer Engineering, Computer Science And Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the crack edge relaxation technique for edge enhancement. [16]
2. With a brief note on various elements of digital image processing system, explain image acquisition devices in detail. [16]
3. How statistical coding is differentiated from spatial coding? Give one example for both the coding. Explain. [16]
4. (a) What do you mean by relative address coding?
   (b) Differentiate one dimentional and two dimentional Run length coding.
   (c) What are the advantages of white block skipping? [6+6+4]
5. Describe the characteristics and applications of the following filter templates [4+4+4+4]
   (a) $\begin{bmatrix} 0 & -1 & 0 \\ -1 & 4 & -1 \\ 0 & -1 & 0 \end{bmatrix}$
   (b) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
   (c) $\begin{bmatrix} 1 & 3 & 1 \\ 3 & 16 & 3 \\ 1 & 3 & 1 \end{bmatrix}$
   (d) $\begin{bmatrix} -1 & -1 \\ 1 & 1 \end{bmatrix}$
6. (a) What is meant by multispectral thresholding? Explain how this method is useful for image segmentation?
   (b) What is meant by multilevel thresholding? Explain how this method is useful for image segmentation. [8+8]
7. (a) List the steps involved in the generation of histogram for a given input image.
   (b) How the image is categorized as [6+10]
      i. dark image,
      ii. bright image,

iii. low-contrast image and
iv. high contrast image.

8. (a) Explain with an example the boundary extraction using morphology operations.
(b) Write short notes on opening and closing. [8+8]

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Code No: NR410507 **NR** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
DIGITAL SPEECH AND IMAGE PROCESS
Common to Electronics And Computer Engineering, Computer Science And Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) List the steps involved in the generation of histogram for a given input image.
   (b) How the image is categorized as [6+10]
      i. dark image,
      ii. bright image,
      iii. low-contrast image and
      iv. high contrast image.
2. (a) Explain with an example the boundary extraction using morphology operations.
   (b) Write short notes on opening and closing. [8+8]
3. With a brief note on various elements of digital image processing system, explain image acquisition devices in detail. [16]
4. Explain the crack edge relaxation technique for edge enhancement. [16]
5. (a) What do you mean by relative address coding?
   (b) Differentiate one dimentional and two dimentional Run length coding.
   (c) What are the advantages of white block skipping? [6+6+4]
6. How statistical coding is differentiated from spatial coding? Give one example for both the coding. Explain. [16]
7. Describe the characteristics and applications of the following filter templates [4+4+4+4]
   (a) $\begin{bmatrix} 0 & -1 & 0 \\ -1 & 4 & -1 \\ 0 & -1 & 0 \end{bmatrix}$
   (b) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
   (c) $\begin{bmatrix} 1 & 3 & 1 \\ 3 & 16 & 3 \\ 1 & 3 & 1 \end{bmatrix}$
   (d) $\begin{bmatrix} -1 & -1 \\ 1 & 1 \end{bmatrix}$

8. (a) What is meant by multispectral thresholding? Explain how this method is useful for image segmentation?

   (b) What is meant by multilevel thresholding? Explain how this method is useful for image segmentation. [8+8]

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Code No: NR410507 **NR** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
DIGITAL SPEECH AND IMAGE PROCESS
Common to Electronics And Computer Engineering, Computer Science And Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the crack edge relaxation technique for edge enhancement. [16]
2. (a) List the steps involved in the generation of histogram for a given input image.
   (b) How the image is categorized as [6+10]
      i. dark image,
      ii. bright image,
      iii. low-contrast image and
      iv. high contrast image.
3. (a) What is meant by multispectral thresholding? Explain how this method is useful for image segmentation?
   (b) What is meant by multilevel thresholding? Explain how this method is useful for image segmentation. [8+8]
4. How statistical coding is differentiated from spatial coding? Give one example for both the coding. Explain. [16]
5. (a) What do you mean by relative address coding?
   (b) Differentiate one dimentional and two dimentional Run length coding.
   (c) What are the advantages of white block skipping? [6+6+4]
6. Describe the characteristics and applications of the following filter templates [4+4+4+4]

   (a) $\begin{bmatrix} 0 & -1 & 0 \\ -1 & 4 & -1 \\ 0 & -1 & 0 \end{bmatrix}$

   (b) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$

   (c) $\begin{bmatrix} 1 & 3 & 1 \\ 3 & 16 & 3 \\ 1 & 3 & 1 \end{bmatrix}$

   (d) $\begin{bmatrix} -1 & -1 \\ 1 & 1 \end{bmatrix}$

7. (a) Explain with an example the boundary extraction using morphology operations.
   (b) Write short notes on opening and closing. [8+8]

8. With a brief note on various elements of digital image processing system, explain image acquisition devices in detail. [16]

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