

(c) Write the basic properties of FT.

(d) What are filters?

(e) What is image morphing?

(f) Where do you use MRA refinement?

(g) What does edge linking do actually?

3. Answer the following questions (**any five**): $5 \times 5 = 25$

(a) What are the coordinate conventions adopted in image processing?

(b) What does stretching of contrast mean? Explain.

(c) Distinguish between correlation and convolution.

(d) How can we reconstruct an image? Explain any two techniques.

(e) Differentiate DWT with DCT techniques of digital image watermarking?

(f) Write short note on interactive restoration.

(g) How scaling function is applied to an object?

(h) What do you know about noise characterization?

(i) What is the significance of LZW coding?

4. Answer the following questions(**any two**): $10 \times 2 = 20$

(a) How lossy is different from lossless image compression? Discuss with example

(b) Discuss the morphological operations in image processing

(c) Describe how image segmentation works in image processing?

(d) Discuss the need of continuous wavelet transform in image processing.

Total number of printed pages = 4

63/1(SEM-5) DSE1 BCAHE5016

2024

COMPUTER APPLICATION

Paper : BCAHE5016

(Digital Image Processing)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions.

1. Multiple choice Type Questions : $1 \times 5 = 5$

(a) _____ is the smallest unit in a digital display

(i) bit

(ii) pixel

(iii) gixel

(iv) byte

(b) What does digitizing the amplitude value called?

(i) Normalization

(ii) Regularization

(iii) Quantization

(iv) Amplification

(c) Image acquisition is also known as _____ step in Image Processing

- (i) Preprocessing
- (ii) Segmentation
- (iii) Image enhancement
- (iv) Image restoration

(d) Name the property where the coding redundancy works.

- (i) Coordinates
- (ii) Intensity
- (iii) Pixel
- (iv) All of the above

(e) Which of the following is known as Region of Interest (ROI) operations

- (i) Filtering
- (ii) Masking
- (iii) Dilation
- (iv) All of the above

(f) Image is basically represented as _____

- (i) 1-D
- (ii) 2-D
- (iii) 3-D
- (iv) 4-D

(g) Fundamental purpose of digital image processing is identified as _____

- (i) Image enhancement
- (ii) Noise addition
- (iii) Distortion
- (iv) All the above

(h) _____ is also sometimes known as gray scale image

- (i) Monochrome images
- (ii) tri-color images
- (iii) Bi-color images
- (iv) Semi-color images

(i) Which one of the following is effected by Interpolation tool?

- (i) Zooming
- (ii) Rotation
- (iii) Quality of image
- (iv) All of the above

(j) Identify from the following that can be solved by Smoothin method

- (i) gray level distribution
- (ii) noise
- (iii) convolution
- (iv) histogram

2. Answer the following questions (**any five**): 2×5=10

- (a) What is perspective projection?
- (b) Why do you use of gradient in image processing?