SP - 180

Total No. of Pages : 2

Seat No.	

B.Tech. (ETC) (Semester - VII) Examination, December - 2023
IMAGE PROCESSING
Sub. Code : 83826

9888

Day and Date : Thursday, 7- 12 - 2023 **Total Marks : 70**

Time : 10.30 a.m. to 1.00 p.m.

Instructions :
1) **Attempt all questions.**
2) **Figures to the right indicate full marks.**
3) **Assume suitable data if necessary.**

Q1) Solve the following MCQs. **[14]**

a) The function of Iris is _____.

i) Detect color ii) Varies focal length

iii) Control source of light iv) Control amount of light

b) Which is the first step in digital image processing.

i) Image enhancement ii) Image acquisition

iii) Image restoration iv) Compression

c) Absence of light receptors on the retinal surface is called as.

i) Blind Spot ii) Black Spot

iii) Zero Spot iv) Null Spot

d) To eliminate the small holes in the binary images, the appropriate operation is

i) Erosion ii) Dilation

iii) Opening iv) Closing

e) Averaging filters is also known as . . . .,filter

i) Low Pass ii) High Pass

iii) Band Pass iv) None of the Mentioned

P.T.O.

f) For line detection we use mask that is

i) Gaussian ii) Laplacian

iii) Ideal iv) Butterworth

g) Which of the following color models are used for color printing?

i) RGB ii) CMY

iii) HIS iv) CMY & CMYK

Q2) Answer any TWO. **[2×7=14]**

a) Explain the basic concept of sampling and quantization of images to convert in digital form.

b) Explain bit plane Slicing in details.

c) Explain average and weighted average filter used in image smoothing.

Q3) Answer any TWO. **[2×7=14]**

a) Explain neighbor, connectivity and adjacency with respect to image pixels.

b) Explain need and significance of Histogram Equalization.

c) Compare image filtering in spatial and frequency domain filtering.

Q4) Answer any TWO. **[2×7=14]**

a) Describe region growing algorithm for segmenting image into different region.

b) Explain Hit- or -miss transform.

c) Define image compression. Why compression is needed in image processing? Explain coding redundancy.

Q5) Answer any TWO. **[2×7=14]**

a) Explain basic Edge detection techniques.

b) Explain thinning and thickening with suitable example.

c) Explain Color transformations.

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