Code No: **R1641042**

R16

Set No. 1

IV B.Tech I Semester Advanced Supplementary Examinations, May - 2022
DIGITAL IMAGE PROCESSING
(Common to Electronics & Communication Engineering and Electronics & Instrumentation Engineering and Electronics & Computer Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
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PART–A *(14 Marks)*

1. a) Write short notes on neighbors of a pixel. [3]
    b) Write short notes on image negative. [2]
    c) Write the drawbacks of inverse filtering. [2]
    d) Explain the need for image compression. [3]
    e) What is the need for edge linking? [2]
    f) What are the uses of color in image processing? [2]

PART–B *(4x14 = 56 Marks)*

2. a) Briefly explain the following mathematical tools used in image processing: [7]
       (i) Linear versus Non linear operations (ii) Arithmetic operations
    b) What are the advantages of image transform? Compare various transforms used [7]
       in image processing.

3. a) Discuss about intensity level slicing and bit plane slicing. [7]
    b) Discuss about image smoothing using Gaussian lowpass filters. [7]

4. a) Discuss about estimation of degradation function using image observation and [7]
       experimentation.
    b) Explain the principles of Computed Tomography. [7]

5. a) Draw the diagram of Block Transform coding and explain it. [7]
    b) What is meant by Subband coding? Explain its use in image processing. [7]

6. a) Explain about edge detection using image gradient. [7]
    b) Discuss about Morphological opening operation. [7]

7. a) Explain about converting colors from HSI to RGB. [7]
    b) Discuss about histogram processing in color images. [7]

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