

Code No: R1641042

R16

Set No. 1

IV B.Tech I Semester Supplementary Examinations, February- 2020
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

PART-A(14 Marks)

1. a) Define picture element. [2]
- b) Differentiate spatial domain and frequency domain. [2]
- c) Write a short note on image degradation process. [3]
- d) Write about bit-plane coding. [3]
- e) What is hole filling? [2]
- f) What is color model? List them. [2]

PART-B(4x14 = 56 Marks)

2. a) Write and explain the fundamental steps in digital image processing. [7]
- b) What is Singular Value Decomposition (SVD) transform? Explain and write its properties and its applications. [7]
3. a) Explain the combining spatial enhancement methods. [7]
- b) Explain briefly about Butterworth High pass filters and Gaussian High pass filters. [7]
4. a) What are the three principles to estimate the degradation function? Explain them. [7]
- b) Explain Fourier-Slice theorem. [7]
5. a) Discuss briefly about Run-Length coding with example. [7]
- b) What is meant by Subband coding? Explain it. [7]
6. a) Write a note on Dilation and Duality. [7]
- b) Discuss about gradient operator and explain its significance in edge detection. [7]
7. a) What is HSI color model? Explain it. [7]
- b) Explain color image smoothing and color image sharpening. [7]

