Roll No. _____

8E8162

Total No of Pages: 2

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B.Tech. VIII-Sem (Main & Back) Exam September 2020
Computer Sc. & Engg.
8CS2A Digital Image Processing
CS,IT

Time: 2 Hours

Maximum Marks: 48
Min. Passing Marks: 16

Instructions to Candidates:

Attempt **three questions**, *selecting* **one question each** *from any three* **unit.**
All Questions carry **equal** *marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.*

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

UNIT- I

Q.1 (a) Define the image. Explain the steps of digital image processing with suitable diagram. [8]

(b) Explain the applications of digital image processing. [8]

OR

Q.1 (a) Explain image sensing and acquisition. [8]

(b) Explain color vision model with example. [8]

UNIT- II

Q.2 (a) Explain why the discrete histogram equalization technique does not, in general, yield a flat histogram. [8]

(b) Discuss the limiting effect of repeatedly applying a 3×3 low pass spatial filter to a digital image. You may ignore border effect. [8]

OR

Q.2 Describe the various types of frequency domain filters. [16]

UNIT- III

Q.3 (a) Explain image degradation and restoration process. [8]

(b) Explain noise and inverse filtering. [8]

OR

Q.3 Design Homomorphic filtering. How do we get back the modified image? [16]

UNIT- IV

Q.4 (a) Describe Lossy compression techniques. [8]

(b) Explain Huffman coding with example. [8]

OR

Q.4 Write a short note on (any two): [2×8=16]

(a) Interpixel redundancy

(b) Psychovisual redundancy

(c) JPEG compression

(d) Coding redundancy

UNIT- V

Q.5 (a) Explain edge detection in detail. [8]

(b) Explain region based segmentation with suitable example. [8]

OR

Q.5 (a) Explain Hough transforms. [8]

(b) Explain about Thresholding. [8]