Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CS-7004(2)-CBGS

B.E. VII Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Digital Image Processing

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Draw a neat block diagram representing components of a general purpose image processing system and explain each component in detail.

   b) Explain the concept of image acquisition using sensor strips (both linear and circular).

2. a) What do you mean by zooming and shrinking of digital images?

   b) What is the significance of terms adjacency, connectivity, regions and boundaries with respect to pixel?

3. a) Explain Walsh Hadamard Transform as a feature selection method for face image retrieval.

   b) State the advantages of Discrete Cosine Transform (DCT) over Discrete Fourier Transform (DFT) in image compression.

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4. a) Prove that applying filters to images in frequency domain is computationally faster than to do the same in image domain.

   b) Explain the concept of Image Subtraction and Image Averaging as tools for enhancement of images using arithmetic or logic operations.

5. a) Prove that after Histogram based processing, from the output a viewer can judge the entire tonal distribution at a glance.

   b) Differentiate between low pass filtering and high pass filtering in image sharpening.

6. a) Explain various noise models.

   b) Explain the difference between Edge and Line with graph.

7. a) Draw a neat block diagram for encoder and decoder in a lossy predictive coding model and explain its working.

   b) Prove that JPEG is a comprehensive continuous tone, still frame compression standard.

8. Write short notes on any three

   a) Applications of Image processing

   b) Lossy compression

   c) Dilation and Crosses

   d) Image point operations

   e) Texture analysis

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