

Image Processing
Mid-Semester Examination
 School of Computer Engineering
 Kalinga Institute of Industrial Technology
 Deemed to be University
 Bhubaneswar, Odisha, India – 24

Time: 90 Mins**Full Mark: 25**

Answer any FIVE questions, including Question No. 1 which is compulsory.

1. Briefly answer the following bits. [1x5]
 - a. Differentiate between high – pass and low – pass filtering.
 - b. How many unique Huffman codes are there for a three-symbol source?
 - c. Discuss the importance of image transform.
 - d. Write two application of image segmentation.
 - e. Explain the frame types in MPEG.
2. Specify the objective of image enhancement technique and List the 2 categories of image enhancement. [5]
3. Given a four-symbol source {a, b, c, d} with source probabilities {0.1, 0.4, 0.3, 0.2}, arithmetically encode the sequence “bbadc”. [5]
4. Explain the different color models with their primary color components. [5]
5. Discuss any Noise Reduction technique by frequency domain filtering. [5]
6. Compress the following 4 x 8, 8-bit image using Huffman coding: [5]

21	21	21	95	169	243	243	243
21	21	21	95	169	243	243	243
21	21	21	95	169	243	243	243
21	21	21	95	169	243	243	243

Also, compute the compression achieved.

7. Write Short notes (any two): [2.5 + 2.5]
 - a. LZW Coding
 - b. JPEG Compression
 - c. Histogram Equalization

~~~~~ALL THE BEST~~~~~