



GIET UNIVERSITY, GUNUPUR - 765022
M. Tech (First Semester) Examinations, January - 2024
MPCEC1030 - Digital Image and Video Processing
(ECE)

Time: 3 Hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A**(2 x 10 = 20 Marks)**

Q.1. Answer all questions

	CO#	Blooms Level
a. Examine the differences between 2-D and 3-D sampling.	CO1	K1
b. What is image processing and provide an example of a basic image processing operation.	CO1	K2
c. What is the function of template matching?	CO1	K2
d. In image processing, what are region and boundary?	CO2	K1
e. Define filtering and list the methods for filtering images.	CO3	K2
f. What is the process of change detection?	CO2	K1
g. What role does threshold play in the segmentation of images?	CO1	K3
h. What is motion segmentation and write down its applications.	CO4	K1
i. What are the basic principles of processing color images?	CO3	K3
j. What is HSB color model in image processing?	CO4	K1

PART – B**(10 x 5=50 Marks)**Answer **ANY FIVE** questions

	Marks	CO#	Blooms Level
2. a. Explain Fourier transformation and its properties.	5	CO4	K2
b. What is sampling? Explain in detail.	5	CO2	K3
3.a. Write a short notes on Image restoration.	5	CO3	K2
b. Write a short notes on Image Degradation.	5	CO2	K4
4. a. What is histogram. Explain the histogram processing with example.	5	CO2	K2
b. Explain the segmentation techniques that are based on finding the regions directly.	5	CO1	K3
5.a. Explain the colour models for image processing.	5	CO2	K2
b. Explain Boundary descriptors in detail with a neat diagram.	5	CO2	K4
6. a. Explain the two techniques of region representation .	5	CO3	K2
b. Compare and contrast the applications of DFT and DCT in image processing.	5	CO3	K2

7.a.	Discuss the aliasing phenomenon and its effects on image quality.	5	CO4	K1
b.	Outline the basic algorithms for 2D motion estimation in image restoration.	5	CO4	K1
8. a.	Provide examples of applications where pseudo-color image processing is beneficial.	5	CO1	K2
b.	Explain the deinterlacing techniques used to improve video quality.	5	CO1	K3

--- End of Paper ---