

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Sixth Semester**Biomedical Engineering**BM3652 - Medical Image Processing**Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks**PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Compare pixel and voxel in imaging.	L2	1	2
2.	Name the types of color models used in image representation.	L1	1	2
3.	Define power law transformation in image enhancement.	L1	2	2
4.	Write the role of sharpening filters in image processing.	L2	2	2
5.	List noise models used in image processing.	L1	3	2
6.	Specify the significance of inverse filtering in image restoration.	L2	3	2
7.	Give the importance of feature based registration.	L2	4	2
8.	Differentiate between orthogonal and perspective projections.	L2	4	2
9.	Write the need for medical image compression.	L1	5	2
10.	Mention two preprocessing techniques for retinal images.	L1	5	2

*PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Discuss the different medical image file formats used in medical image processing with their applications. Or	L4	1	16
	b Discuss the functioning and importance of 2D DFT, DCT, and KLT transforms in medical image processing.	L4	1	16
12.	a Explain different histogram processing techniques and discuss their applications in medical image processing. Or	L3	2	16
	b Explain the principle and working of homomorphic filtering for image enhancement in detail.	L3	2	16
13.	a Describe edge linking and boundary detection methods and their significance in segmenting medical images. Or	L4	3	16
	b Describe the region based segmentation techniques in detail and their application in medical image analysis.	L4	3	16

14.	a	Explain the process of medical image registration using principal axes registration and its significance in multimodal imaging.	L3	4	16
		Or			
	b	Discuss the importance of registration techniques in integrating different medical imaging modalities.	L3	4	16
15.	a	Describe wavelet based image compression techniques and their importance in medical imaging.	L4	5	16
		Or			
	b	Describe the techniques involved in preprocessing the medical images in detail.	L4	5	16