



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU



Reg. No:

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B.E/B.Tech - Internal Assessment - III
Academic Year 2024-2025 (Even Semester)
Sixth Semester

B

Biomedical Engineering

19BMB304 – Biomedical Image Processing

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions

PART – A (5*2=10 Marks)				Bloom's Level	CO	Industry / GATE
1.		Outline Medical Imaging modalities.		UND	CO4	
2.		What do you mean by ionizing radiation?		REM	CO4	
3.		Recall Computer aided diagnosis.		REM	CO4	
4.		Define molecular imaging.		REM	CO5	GATE 2023
5.		List the applications of biomedical images.		REM	CO5	GATE 2021
PART – B (2*13=26 Marks)						
				Bloom's Level	CO	Industry / GATE
6.	(a)	Compare the physics and clinical usage of ionizing and non-ionizing imaging with suitable elements.	13	ANA	CO4	GATE 2023
		(OR)				
	(b)	Analyze the challenges in image reconstruction for CT and MRI and suggest strategies to optimize image clarity.	13	ANA	CO4	GATE 2022
7.	(a)	Examine the image processing techniques used for early-stage tumor detection in lung CT scans.	13	ANA	CO5	
		(OR)				
	(b)	Analyze the potential of molecular imaging in personalized cancer therapy.	13	ANA	CO5	

PART – C (1*14=14 Marks)

				Bloom's Level	CO	Industry / GATE
8.	(a)(i)	Analyze the performance of an automated PACS system integrated with cloud-based telemedicine platforms. What are the security and scalability concerns?	7	ANA	CO4	
	(ii)	List the steps involved in to differentiate benign and malignant breast lesions in mammograms using texture features.	7	ANA	CO5	
		(OR)				

	(b)(i)	A radiology department is facing challenges in distinguishing overlapping structures in chest X-rays, affecting pneumonia diagnosis accuracy. List the techniques to improve feature visibility and evaluate its effectiveness in clinical diagnosis.	7	ANA	CO4	
	(ii)	A 58-year-old patient undergoes digital subtraction angiography to assess coronary artery disease. Analyze the image processing steps involved in enhancing vessel visibility and detecting stenosis.	7	ANA	CO5	

Bloom's Taxonomy: REM – Remember UND – Understand APP – Apply ANA – Analyze EVA - Evaluate CRT – Create

Faculty In charge

Teaching Coordinator

HoD