PRN:		Course Code :	ECE4072R1

Final Year **B. Tech** End Semester Examination Summer 2024

Biomedical Image Processing and Applications

Day and Date: 29 MAY 2024, Wed Max Marks: **100**

Time : 10:30AM To 01:30PM Duration: **03**hrs

Instructions:All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Illustrate the basic relationship between pixels	08	L2	CO1
	b)	Describe the difference between spatial domain and frequency domain methods of image enhancement.	08	L4	CO1
		OR			
	b)	Explain digital image and describe various steps in digital image processing.	08	L2	CO1
Q.2		**Attempt the following**			
	a)	List different Intensity transformation functions. Describe any two in detail.	08	L5	CO2
	b)	Explain different line detection techniques.	08	L2	CO2
		OR			
	b)	List different image Segmentation methods and explain edge	08	L4	CO2
Q.3		**Attempt any two from the following**			
	a)	With proper example explain Erosion and Dilation operation.	08	L5	CO3
	b)	Construct the Region filling algorithm with help of figure,	08	L4	CO3
	c)	What is Convex hull? Explain the Convex hull algorithm.	08	L5	CO3
Q.4		**Attempt any two from the following**			
	a)	What is Image Understanding? List various Image understanding control strategies, explain any one strategy.	08	L4	CO4
	b)	What is a semantic image segmentation and explain its types	08	L2	CO4
	c)	Explain the difference between bottom-up control and top-down control.	08	L4	CO4
Q.5		**Attempt any Two of the following**			
	a)	Determine computer assisted diagnosis based biomedical signal processing and analysis.	09	L4	CO5
	b)	Illustrate different biomedical signals and provide a detailed explanation of any two.	09	L4	CO5
	c)	Explain the classification of biomedical signals and how does its application indicate the sources of biomedical signals?	09	L5	CO5

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Q.6	**Attempt any Two of the following**				
a)	Illustrate the use of Holomorphic filtering	09	L4	CO6
b)	Explain the use of wiener filter for image restoration.	09	L5	CO6
c)	What is image restoration? Examine its cause of degradation and objectives of image restoration.	09	L3	CO6

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