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18CS642

**B. E. Degree (Autonomous) Sixth Semester End Examination (SEE), JUL/AUG 2021****DIGITAL IMAGE PROCESSING****MODEL QUESTION PAPER -1****Time:[ 3 Hours ]****[ Maximum Marks:****Instructions to students**

1. Answer FIVE FULL Questions.
2. Answer ANY ONE from Question No. 1 and 2
3. Answer ANY ONE from Question No. 3 and 4
4. Answer ANY ONE from Question No. 5 and 6
5. Answer ANY ONE from Question No. 7 and 8
6. Answer ANY ONE from Question No. 9 and 10

SL NO	MODULE 1	Marks	CO	BTL
1 (a)	With a block diagram, Explain the fundamental steps in digital image processing.	10	CO1	L2
1 (b)	Discuss the origins of digital image processing with examples.	10	CO1	L2
<b>OR</b>				
2 (a)	Demonstrate the working of brightness adaptation and discrimination.	10	CO1	L3
2 (b)	Explain various adjacency and distance measures between pixels with examples.	10	CO1	L2
<b>MODULE 2</b>				
3 (a)	Define image enhancement. Demonstrate how power law transformation is used in display devices.	10	CO2	L3
3 (b)	Explain histogram equalization with suitable diagrams.	10	CO2	L2
<b>OR</b>				
4 (a)	Explain smoothing frequency domain filters with suitable diagrams.	10	CO2	L2
4 (b)	Explain sharpening frequency domain filters with suitable diagrams.	10	CO2	L2
<b>MODULE 3</b>				
5 (a)	Explain the image degradation model, with a neat diagram.	10	CO3	L2

5 (b)	Discuss in detail, the important noise probability density functions found in digital image processing.	10	CO3	L2
<b>OR</b>				
6 (a)	Demonstrate how inverse filtering works.	10	CO3	L3
6 (b)	Explain band pass filters and band reject filters.	10	CO3	L2
<b>MODULE 4</b>				
7 (a)	Explain various colour models in colour image processing.	10	CO4	L2
7 (b)	Explain pseudo colour image processing.	10	CO4	L2
<b>OR</b>				
8 (a)	Explain all types of data dependencies with suitable derivations.	10	CO4	L2
8 (b)	Discuss image compression models with suitable block diagrams.	10	CO4	L2
<b>MODULE 5</b>				
9 (a)	Discuss point, line edge detection with suitable explanations.	10	CO5	L2
9 (b)	Explain thresholding in image segmentation.	10	CO5	L2
<b>OR</b>				
10 (a)	Discuss the morphological operations dilation and erosion.	08	CO5	L2
10 (b)	Explain opening and closing operations in morphological image processing.	04	CO5	L2

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