May '23

TE Sem VI (C Scheme R-2019) "AI & DS"

8/5/2023

Duration: 3hrs   **Max Marks: 80**

N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

1	Attempt any **FOUR**	[20]
a	Compare Lossless Compression Techniques & Lossy Compression Techniques	[5]
b	State and Explain properties of FFT.	[5]
c	Explain zero memory enhancement techniques 1) Contrast Stretching 2) Thresholding	[5]
d	Find the DCT of the given sequence. $f(x) = \{1,2,4,7\}$	[5]
e	Explain sampling and Quantization.	[5]
2 a	Explain split and merge segmentation Technique.	[10]
b	What do you mean by redundancy in digital image? Explain image compression model.	[10]
3 a	Find DFT of the given image using DIT-FFT.	[10]

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0   1   2   1
1   2   3   2
3   3   4   3
1   2   3   2
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b Equalize the given histogram   [10]

Grey level	0	1	2	3	4	5	6	7
Number of Pixels	790	1023	850	656	329	245	122	81

4 a	Write short note on Fast Hadamard Transform.	[10]
b	Explain in detail low pass (smoothing) filters.	[10]
5 a	Explain edge detection in detail.	[10]
b	Explain Huffman Coding with example.	[10]
6 a	Explain Digital video format and estimation in detail.	[10]
b	Write short note on	[10]

1) Composite and Component Video

2) BMP Image File Format

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