B. TECH. (COMPUTER SCIENCE & BUSINESS SYSTEMS) (CBCS - 2018 COURSE)

B.Tech. (CSBS) Sem - VIII :SUMMER- 2022

SUBJECT : IMAGE PROCESSING & PATTERN RECOGNITION

Day : Friday
Date : 24-06-2022

S-20497-2022

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Use of non-programmable calculator is **allowed**.
4) Assume suitable data **WHEREVER** necessary.

Q.1 Explain histogram equalization and increase the intensity of following image by 30. **(10)**

6	3	3	3
6	7	8	2
6	1	5	6
3	4	5	3

OR

Q.1 Explain the fundamental steps in Digital Image Processing. **(10)**

Q.2 Explain the different types of the filters used in Image Processing. **(10)**

OR

Q.2 Explain the importance of image restoration process in image processing. Explain any four important noise probability density functions. **(10)**

Q.3 Apply LZW coding on following data. **(10)**

19	19	159	159
19	19	159	159
19	19	159	159
19	19	159	159

OR

Q.3 Find out the number of bits required for Huffman coding and without Huffman coding of following data. **(10)**

Letters	a1	a2	a3	a4	a5
Probability	0.2	0.4	0.2	0.1	0.1

Q.4 Explain Hit or Miss Transformation with an example. **(10)**

OR

Q.4 Explain the concept of feature extraction in pattern recognition system with examples. **(10)**

Q.5 What are the challenges in Bayesian decision theory? **(10)**

OR

Q.5 With the help of suitable diagram explain classifiers and functional structure of general statistical pattern classifier. **(10)**

Q.6 Explain in detail Principal Component Analysis (PCA). **(10)**

OR

Q.6 What is need of Hough Transform? Explain in detail. **(10)**

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