Dr Nishant

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May-2019

PhD II Semester

COURSE CODE: 16M1WEC231 MAX. MARKS:35

COURSE NAME: ADVANCE DIGITAL IMAGE PROCESSING

COURSE CREDITS: 3 MAX. TIME: Two Hours

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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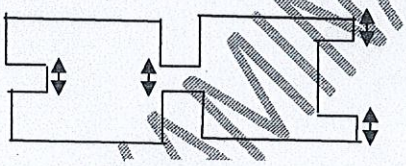
1. With respect to morphological operators for images, write a short note on the following:
   a. Erosion
   b. Dilation
   c. Opening and Closing

[1.5 + 1.5 + 2 = 5] CO2

2. Draw the result of morphological opening and closing of the image given below by a circular structuring element. (Note that all the length indicated by double sided arrow are equal)

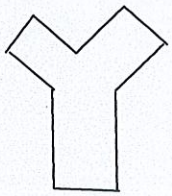


(Image)

(Structuring Element)

[5]

3. Explain the procedure to obtain the morphological skeleton of the following object:



[5]

4. Obtain and draw a single line perceptron for AND gate.

[5]

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5. What do you understand by activation functions with respect to neural network? List any four activation functions.

[3]

6. Explain how statistical parameters help in classifying various textures in an image?

[2]

7. For the image, I given below, generate normalized GLCM considering pixel pairs oriented at 90° with each other and at a distance of 2 pixels. Also evaluate ASM and contrast from the GLCM obtained.

I =

1	1	1	2	2
1	1	1	2	2
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1

[5] CO5

8. Write a brief note on the following.
   (i) Average Filter
   (ii) Median Filter
   (iii) Histogram

[2+2+1=5] CO2

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