

## ECE 5470 Digital Image Processing Homework # 10

Due Date: April 20, 2020 4:00 pm

### 1. Opening and Closing

1. Download the images Fig6-1a.tif and Fig6-1b.tif. Write your own code to apply following binary operations sequentially

- a. Apply Opening

$$A \circ B = (A \ominus B) \oplus B$$

Means {(A Erosion B) Dilation B}

- b. Then, apply Closing the result of (a)

$$A \bullet B = (A \oplus B) \ominus B$$

Means {(A Dilation B) Erosion B}

Use the following structuring element and display the result for each case.

|   |   |   |
|---|---|---|
| 0 | 1 | 0 |
| 1 | 1 | 1 |
| 0 | 1 | 0 |

and

|   |   |   |
|---|---|---|
| 1 | 1 | 1 |
| 1 | 1 | 1 |
| 1 | 1 | 1 |

**Write your own code for each question**