Advanced Digital Image Processing  
(CE 40-823)  

Assignment No. 4  

Due time: 1386/3/31  

NOTE:  
Read the “HW_important notes.doc” file (in the course web page resource folder)  
Those reports which have not the specified properties may not be considered.  

1- Solve the following problems from text book:  
   1. 8.4  
   2. 8.11  
   3. 9.6  
   4. 9.8 a,b  
   5. 11.2  

2- Computer project: Three features (lake, bay, and line segment) useful for differentiating thinned objects in an image are shown in the following figures. Develop a morphological/ logical algorithm for differentiation among these shapes, the input to your algorithm would be one of these three shapes. The output must be the identity of the input. You may assume that the features are 1 pixel thick and that each is fully connected. However, they can appear in any orientation.
3- **Computer project:** Write a program that takes one image as input and corrupt it by linear motion blur function with given parameter and additive Gaussian noise with zero mean and given variance and after that try to restore it by Weiner filter. In your report explain your results and defects produced by using the filter.

- Try to restore the image by wrong parameters and explain the consequences of this misestimating.