Problem A:

Code:

#Read the image

A = imread('Defect.png')

image(A)

imhist(A) to check the intensity of the image

b = imcrop(A,[160 85 500 650])Cropping the image

igray = rgb2gray(B)

imshow(Igray)

imshow(igray)

Ithresh = im2bw(igray,.8)

imshow(Ithresh)

figure,imshow(Ifilled)

imshow(Ithresh)

Ifilled = imfill(Ithresh,'holes')

figure,imshow(Ifilled)

st = strel('Disk', 5)

Iopen = imopen(Ifilled,st)

Iregion = regionprops(Iopen, 'Area')

[labeled,numObjects] = bwlabel(Iopen,4)

stats = regionprops(labeled,'Area')

areas = [stats.Area]

areas =

139512 106 324

Totalarea = sum(areas) #133942 #326151

st1 = strel('Disk', 710)

Iopen1 = imopen(Ifilled,st1)

bin\_im = imcomplement(Iopen1)

ire1 = regionprops(bin\_im,'Area')

[labeled,numObjects] = bwlabel(bin\_im,4)

stats = regionprops(labeled,'Area')

areas = [stats.Area]Portion = Totalarea/areas