

Final Exam Problems  
*Image Processing With Applications - Math597, Math489, CSCI597*  
Spring 2007

10 Final Grade Points

**Problem 1.** If  $H_{GNRF} = 1 - e^{-0.5 \frac{D_1(u,v)D_2(u,v)}{D_0(u,v)}}$  is the Gaussian Notch Reject Filter of radius  $D_0$  and  $H_{BNRF} = \frac{1}{1 + [\frac{D_0^2}{D_1(u,v)D_2(u,v)}]^n}$  is the Butterworth Notch Reject Filter of radius  $D_0$  find the

Gaussian Notch Pass Filter and the Butterworth Notch Pass Filter.