CS 5420	**Visual Data Processing**	Test 2
Name:	Winter 2006	Max Pts: 38

Important: This is an open book test. You can use any books, notes, or paper, but not exchange anything with other students. You are not allowed to use any electronic/communication devices, including a calculator. *Do not log into the computer during the test*. Any calculations and rough work can be done on the back side of the test pages. You will lose five points for not writing your name.

1. [6 pt] Application of Fourier transforms yields a set of coefficients that describe frequency. How can you determine the amplitude and angle of a frequency from one of these coefficients?

2. [8 pt] What is a zero phase shift filter? Give an example of such a filter and show an application where it will be useful.

3. [8 pt] What is the effect of applying a notch filter to an image? Explain the reason for the effect.

4. [6 pt] What is the representation of the color yellow in HSI?

5. [6 pt] We normally require tristimulus components to represent color. Thus, almost all the color systems have three variables to represent a single color. However, we noted that we can represent color using two components x and y in the (x, y, z) system. What is lost when we use this system?

6. [4 pt] The number of colors that can be faithfully reproduced in any system is 256. Yet, we defined the number of safe colors as 216. Why?