1. Convert the following binary numbers to decimal (base 10).

   - 11001
     - 16+8+1=25
   - 01001
     - 8+1=9
   - 10011
     - 16+2+1=19

2. How would the indexed color table for an image of the ocean differ from the indexed color table for an image of a red rose?

   The color table for the ocean will contain mostly blues and whites, the color table for the red roses will contain mostly reds and blacks.

3. A US passport photo is required to be 2”x2” when printed. To be a good quality print, you want to print it at 300 dpi. What should the pixel dimension be of your photograph to meet the requirements?

   The pixel dimension should be 600x600 pixels.

4. When saving an image in the compressed JPEG format, what information is lost?

   Some color information and high frequency/fine detail information is lost.

5. Describe how a sharpening filter in Photoshop is similar to lateral inhibition in the retina.

   A sharpening filter increases contrast near edges separating light and dark areas. It makes the light side lighter and the dark side darker.