COSC 335 – Operating Systems
Exam Review #1
Spring 2009

1.) What is a PCB? What function does it serve? What are five things contained in a PCB?

2.) Fully describe the traditional implementation of ThreadJoin(tid).

3.) List and describe the five process states mentioned in class. Draw the state diagram for these states.

4.) What is hyperthreading? Does it provide a linear speedup? Why or why not?

5.) Does the following two-thread Too Much Milk solution guarantee only one jug of milk at a time, without fear of starvation? Explain your answer.

Leave note A;   Leave note B;
while (note B)   if (noNoteA)
  do nothing;   if (noMilk)
if (noMilk)   buy Milk;
  buy Milk;   remove note B;
remove note A;

6.) What is a context switch? Give an example of where we've run into a problem because we have to be concerned about context switches.

7.) What is an Operating System?

8.) What are two things we can do to protect threads from each other? Fully describe one of the two approaches you mention.

9.) What is uniprogramming and why is it not suitable for modern PCs?

10.) What are some issues with threads sharing the same memory space? How can we solve these issues?