UNCC, Department of Electrical and Computer Engineering, ECGR 4101/5101 Fall 2005, Homework #11, Due: 11/30/05, at the beginning of class (20 points)

- 0. How long did this homework take you? (1 point)
- 1. Read the Michael Barr article "Introduction to Counter/Timers". In three sentences of correct English, summarize the general concept presented in the article. (4 points)
- 2. Read the article Reentrancy by Jack Ganssle. In 4 lines of correct English, describe why Mr. Ganssle thinks you may find "60 Minutes" knocking on your door. (4 points)
- 3. Fill in the table below to show which tasks the processor will execute and when, as well as scheduler table contents. Assume that timer tick interrupts occur every 1 millisecond, all tasks take 500 microseconds to complete, and initialTimerValue for tasks A, B and C are 3, 3 and 4 respectively. Note that the entries in the table (e.g. timer, run, enabled) show the variable's value after the timer tick interrupt occurs. This means that a task will run on the tick after its timer reaches 1. Assume task B has the highest priority, followed by task C and then A. (11 points)

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|---------------------------|---------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| Task | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Name | | | | | | | | | | | | | | | |
| Α | timer | 2 | | | | | | | | | | | | | |
| | run | 0 | | | | | | | | | | | | | |
| | enabled | 1 | | | | | | | | | | | | | |
| В | timer | 1 | | | | | | | | | | | | | |
| | run | 0 | | | | | | | | | | | | | |
| | enabled | 1 | | | | | | | | | | | | | |
| С | timer | 4 | | | | | | | | | | | | | |
| | run | 1 | | | | | | | | | | | | | |
| | enabled | 1 | | | | | | | | | | | | | |
| Processor Activity | | С | | | | | | | | | | | | | |

Tick Number