

**UNCC, Department of Electrical and Computer Engineering, ECGR 4101/5101
Fall 2005, Homework #12, Due: 12/7/05, at the beginning of class (20 points)**

0. How long did this homework take you? (1 point)
1. Read the Eric Umansky article "Studs and Duds". In three sentences of correct English, summarize the general concept presented in the article. (4 points)
2. Read the Jack Ganssle article "Asynchronicity". In three sentences of correct English, summarize the general concept presented in the article. (4 points).
3. For our M30626 MCU, how many threads can be in the running state? How many can be in the ready state? How many can be in the waiting state? (3 point)
4. Which of the following C variables are compiled into atomic code for the M16C architecture? (3 point)
 - a. char a;
 - b. int b;
 - c. long c;
 - d. float d;
 - e. struct {int g; char f;} e;
5. Assuming that Thread B was running and the dispatcher decided to context switch to Thread A and the contents of the TCB for Thread A are as follows, show the contents of Thread A's stack before the REIT instruction in the dispatcher is executed. (5 points)

Thread A	Value
R0	0x13
R1	0x44
R2	0xA4
R3	0xC1
A0	0x0A56
A1	0x0670
Flag	0x35
ISP	0x0AFF
USP	0x0A00
FB	0x0A60
SB	0x04C0
PC	0xFA046

Address	Value
0x9FA	
0x9FB	
0x9FC	
0x9FD	
0x9FE	
0x9FF	
0xA00	
...	
0xAF9	
0xAFA	
0xAFB	
0xAFC	
0xAFD	
0xAFE	
0xAFF	