

ECGR 4101/5101, Fall 2008, Quiz 15 - 12/1/2008

1. 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 1.2 milliseconds to complete, and initialTimerValue for tasks A, B and C are 2, 4 and 5 respectively. Note that the entries in the table in column “Right before n” (e.g. timer, run, enabled) show the variable’s value right before the timer tick interrupt occurs. This means that a task will run on the tick when its timer reaches 0 (but show the value after the tick and after the ISR executes). Assume task A has the highest priority, followed by task B and then C. (11 points)

Task Name		Right before n	Tick Number													
			n	n+ 1	n+ 2	n+ 3	n+ 4	n+ 5	n+ 6	n+ 7	n+ 8	n+ 9	n+ 10	n+ 11	n+ 12	n+ 13
A	timer	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
	run	0	0	1	0or1	1	0or1	1	0or1	1	0or1	1	0or1	1	0or1	1
	enabled	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
B	timer	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1
	run	0	0	0	1	0or1	0	0	1	0or1	0	0	1	1	1	0or1
	enabled	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C	timer	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2
	run	0	1	0or1	0	0	0	1	1	1	1	0or1	1	1	1	1
	enabled	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Activity	---	C	C,A	A,B	B,A	A	A	A,B	B,A	A,C	C,A	A	A	A,B	A,B

Scoring:

- Activity line: 5 points, -1/2 for each incorrect column (up to 10 wrong)
- Timer lines: 3 points, 1 for each correct row (entire row must be correct)
- Run lines: 2 points total = if mostly correct, 1 point if many errors, 0 points if all wrong.
- Enabled lines: ignore