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## CSCI 4210 — Operating Systems Spring 2020 Exam 1 (February 24, 2020)

- You have 105 minutes to complete this exam (i.e., 10:00-11:50AM); note that 50% extra time is 160 minutes and 100% extra time is 210 minutes.
- You may use one double-sided or two single-sided 8.5"x11" crib sheets containing anything you would like; crib sheets will not be collected.
- Please silence and put away all laptops, notes, books, phones, electronic devices, etc.
- Questions will not be answered except when there is a glaring mistake or ambiguity in a question. Please do your best to interpret and answer each question.
- Exam 1 will be scanned and graded in Submitty; therefore, please write clearly and do not fold or rip this page in any way.
- Specify your answers to Questions 1-12 below by filling in **exactly one** answer for each question.

Question	Answer (select only one)	Possible Points
1	(a) (b) (c) (d) (e)	6
2	(a) (b) (c) (d) (e)	6
3	(a) (b) (c) (d) (e)	6
4	(a) (b) (c) (d) (e)	6
5	(a) (b) (c) (d) (e)	6
6	(a) (b) (c) (d) (e)	6
7	(a) (b) (c) (d) (e)	6
8	(a) (b) (c) (d) (e)	6
9	(a) (b) (c) (d) (e)	6
10	(a) (b) (c) (d) (e)	6
11	(a) (b) (c) (d) (e)	6
12	(a) (b) (c) (d) (e)	6

• Answer Questions 13 and 14 on the back of this page.

## Question 13 (16 POINTS)

Output 1

200:3 4 In

200: [RPIINRPIN] IN

301: [05-4210:05-4] \n

Output I

200:34 \n

301 : [RPIIIRPIII] In

200: [05-4210:05-4] \n

Output 3

200:3 4 \n

301: (05-4210:05-4) M

200: [RPlinkelin] m

Output 4

200:3 4 m

200: [05-4210:05-4] \n

301: [RPIMRPIM] IN

Any of the above outputs could occur

## Question 14 (12 POINTS)

Process			Number of Preemptions
P1	25 ms	13 ms	2
P2	32 ms	18 ms	2
Р3	4 ms	O	O
P4	13 ms	9 105	1