Last name _____ First name _____

Economic Dynamics: Final Examination	
Prepared by: David Wheat	*Date: 13 December 2018*
Maximum Duration: 2 hours	**Grade: _____**
During the examination the students are required to behave in accordance with the norms of the academic ethics.	

Procedures for taking the exam:

1. As a condition of being allowed to take this exam and having it graded, you must not communicate in any way—including electronic communication— with another person, except the person administering the exam (the 'proctor').

2. You may use an English dictionary during the exam. Nothing else is allowed on your desk during the exam (no phone, no calculator, no computer, no notes, etc.).

3. If you have questions during the exam, raise your hand to get your proctor's attention. The proctor is only permitted to clarify exam questions or tasks; i.e., what you are required to do. The proctor cannot answer any other questions.

4. Write your name on each page of the exam.

5. Write (or print) legibly. If your answers are difficult to read, they may be read incorrectly and your grade will suffer.

6. There are two parts to most questions:
   1st, a multiple choice option where you should select answer 'a' or 'b'
   2nd, an open-ended question where you should write a brief sentence to explain why your answer on the 1st part is correct (or why the other option that you did not select is incorrect).

   The last question is not multiple choice; it requires a discussion of behavior that could be expected from a given structure.

7. **Sign this Honor Pledge**:

I did my own work on this exam. I did not receive help during the exam, and I did not give help to anyone else. I understand that if I sign this pledge falsely, I will not qualify for a passing grade on the exam and I will not qualify for course credit.

_____
signature

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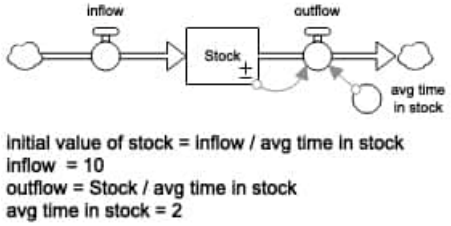
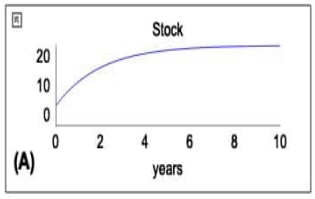
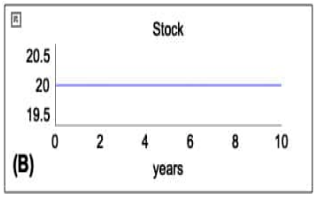
Question #1 (20 points)

Structure:



Behavior Options:



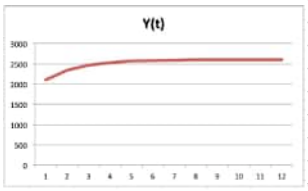


1.1 Given the structure on the left, which behavior would occur? (a) **A** (b) **B**

1.2 Why is your answer better than the other possible answer?

Question #2 (20 points)

Spreadsheet Model Behavior and Structure:

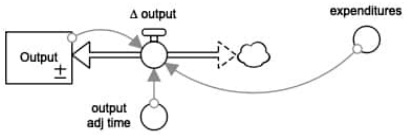


$$C(t) = a + bYd(t)$$
$$Yd(t) = Y(t) - Tx(t)$$
$$Tx(t) = Tx_0 + tx.Y(t)$$
$$NX(t) = X + mY(t)$$
$$E(t) = C(t) + I + G + NX(t)$$
$$\Delta Y(t+1) = \lambda(E(t) - Y(t)) \quad \lambda > 0$$

Options for Part of SD Structure:

(A) Δ output = (expenditures-Output)/output adj time

(B) Δ output = (Output-expenditures)/output adj time



SD Structure Options:

2.1 Given the behavior and structure of the spreadsheet model, which SD structural equation would be consistent with the last equation in the spreadsheet structure? (a) **A** (b) **B**

2.2 Why is your answer better than the other possible answer?

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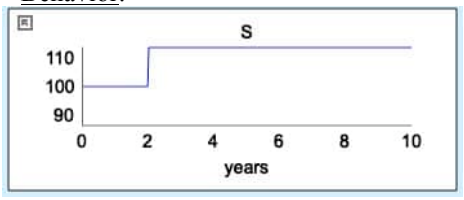
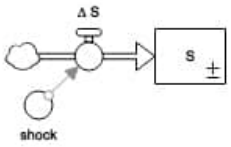
Question #3 (20 points)

Behavior:



Structure Options:



(A) shock = PULSE(10, 2, 0)

(B) shock = STEP(10, 2)

3.1 Given the behavior on the left, which structure produced it? (a) **A** (b) **B**

3.2 Why is your answer better than the other possible answer?

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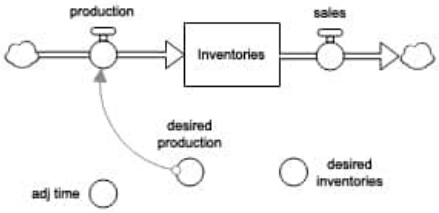
Question #4 (20 points)

Behavior:

Structure Options:



(A) desired production = (desired inventories - Inventories) / adj time

(B) desired production = sales + (desired inventories - Inventories) / adj time

4.1 Given the behavior on the left, which structure produced it? (a) **A** (b) **B**

4.2 Why is your answer better than the other possible answer?

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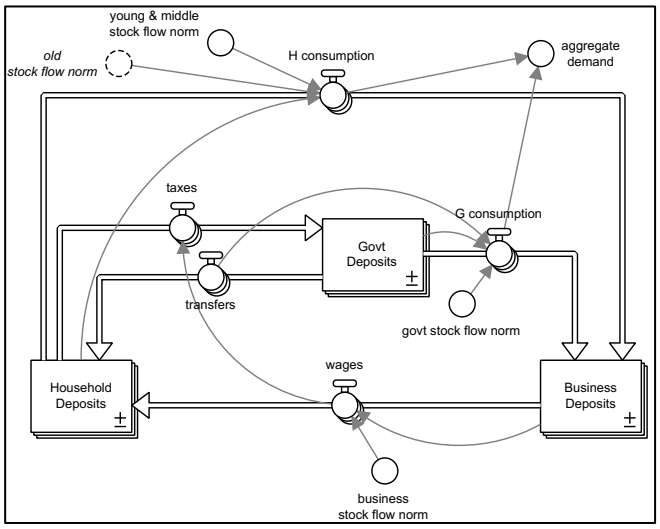
Question #5 (20 points)

Structure:

This is the model we discussed in the final lecture.



The equations in the H consumption flow are:

	goods	services
young	(Household Deposits[young]*.4) / young & middle stock flow norm	(Household Deposits[young]*.6) / young & middle stock flow norm
middle	(Household Deposits[middle]*.4) / young & middle stock flow norm	(Household Deposits[middle]*.6) / young & middle stock flow norm
old	(Household Deposits[old]*.4) / old stock flow norm	(Household Deposits[old]*.6) / old stock flow norm

And the 'young & middle stock flow norm' = 0.50

Behavior:

Assume the model is initially in equilibrium, with aggregate demand equal to $20/year (trillions). Then, in year 2, the middle-aged households change their consumption in order to increase the average level of their bank deposits. Their 'stock flow norm' rises from 0.50 to 0.51. Draw on the graph the pattern of aggregate demand that would result from this change in the structural equations. Use information from the diagram and your knowledge of the previously-studied model to support your answer with sound reasons.