

# Sample Exam

## Computational Macroeconomics

### Fall 2025

Date: December 10, 2025    Duration: 90 minutes

**Name:** \_\_\_\_\_

**Instructions:**

- This exam is closed book, closed notes, no internet.
- Please make sure your handwriting is neat and legible.
- For some questions, there may not be a single correct answer. You will receive credit as long as your response includes reasonable justification or explanation.

Question	Max Points	Score
1	70	_____
2	10	_____
3	20	_____
<b>Total</b>	<b>100</b>	_____

**1. XX model (sample exam)****Points: 70**

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Consider the following economy. Households maximize lifetime utility

$$\sum_{j=1}^J \beta^{j-1} u(c_j),$$

where .... The utility function is given by

$$u(c) = \dots$$

where ...

The budget constraint is

$$xxx = yyy$$

where ....

A representative firm produces final goods according to a Cobb–Douglas technology that combines aggregate capital  $K$  and labor  $H$ :

$$Y = K^\alpha H^{1-\alpha}$$

Please answer the following x questions.

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**Question 1.1. (15 points)** Explain the basic idea of how to solve for the stationary equilibrium of this economy. What are the equilibrium objects? How do you find these equilibrium objects computationally? (e.g., What variables do you need to make a guess for? How do you verify whether that guess is correct? If the guess is not correct, what would you do next? You do not have to write down code.)

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**Question 1.2. (15 points)** Explain how to calibrate the model. Which parameters are to be calibrated? How would you determine each parameter? (e.g., “I determine  $\alpha$  as observed in data, as  $\alpha$  is directly observable in the data. I determine  $\beta$  so that the model replicates ...” It is not necessary to mention exact value of the parameter or the targeted moment.)

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**Question 1.3. (10 points)...**

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End of exam.