

# Introduction to Agent-Based Modeling (Summer 2023)

## 7.6 Wrapup » Unit 7 Exam

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### Question 1

In the section on Verification, we discussed a component test to make sure that the setup of the voting model was correct. What other would it be appropriate to create a component test for within the NetLogo model?

- A. the way that agents are placed in the model
  - B. the determination of the vote for each agent
  - C. the model's BehaviorSpace output
  - D. verifying that the model's switches control the right functions
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### Question 2

What is an example of micro-face validity for the voting model?

- A. voters choose one vote or the other
  - B. voters are green or blue
  - C. the aggregate patterns of voting match empirical aggregate patterns
  - D. the number of agents in the model is equivalent to the US population
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### Question 3

Which of these is not a traditional dimension of replication for computer models?

- A. geography
  - B. language / toolkits
  - C. people
  - D. time
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### Question 4

Calibration is performed on \_\_\_\_\_ data, while validation is performed on \_\_\_\_\_ data.

- A. input, testing
  - B. training, output
  - C. training, testing
  - D. input, output
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### Question 5

What is the name for a description of code that is very similar to code, but is not written in the final language?

- A. NetLogo
- B. pseudocode
- C. flowchart
- D. javascript

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**Question 6**

What is an example of empirical output validation for the flocking model?

- A. the velocity of the birds in the model is set to be similar to the velocity of birds in the real world
  - B. the overall patterns of behavior look like flocks
  - C. demonstrating that the average flock size in the model is similar to real average flock sizes
  - D. the color of the birds is appropriate
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**Question 7**

With respect to the voting model, if one of the political scientists argues that the model is unrealistic because the some individuals of trusted more than others, what kind of validation concern is this?

- A. macro-face validation
  - B. micro-face validation
  - C. empirical output validation
  - D. cross-validation
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**Question 8**

The process by which one developer creates an implemented model from another developer's conceptual model is:

- A. calibration
  - B. replication
  - C. verification
  - D. validation
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**Question 9**

When a model indicates that a certain result will always happen, such result is a(n) \_\_\_\_\_ result.

- A. variant
  - B. path dependent
  - C. stochastic
  - D. invariant
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**Question 10**

Which type of verification is rarely possible for an agent-based model?

- A. documentation
- B. formal verification by proof
- C. unit testing
- D. debugging walkthrough