

# Introduction to Agent-Based Modeling (Summer 2023)

## 5.6 Wrapup » Unit 5 Exam

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### Question 1

In the Grand Canyon model, we see a kind of Agent-Environment interaction where agents actions are controlled by the environment of these actions would be an Agent-Environment interaction, where agents modify the environment?

- A. Have the water droplets move faster
  - B. Have the water droplets "erode" the elevation of a patch
  - C. Have two droplets join together
  - D. Have water droplets form pools
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### Question 2

What kinds of interactions would you most likely see in an ecological food web mode where the animals involved are all mobile?

- A. Environment-Environment interactions
  - B. Agent-Agent interactions
  - C. Environment-Self Interactions
  - D. Adaptive Interactions
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### Question 3

We have discussed a bunch of environment types, but are these mutually exclusive? Can you identify a model where geographic and environments both exist?

- A. no such model exists
  - B. a model where individuals in Omaha, NE need to get an email to individuals in NYC that they do not know, and both physical and social distance are recorded
  - C. crop growth models in the Midwest, where both rain levels and crop yield are recorded
  - D. a model of the diffusion of apps on Facebook
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### Question 4

What are the two primary procedures that are usually defined in NetLogo to control the majority of actions in the schedule?

- A. ASK and BACK
  - B. TICK and FORWARD
  - C. CA and RESET-TICKS
  - D. SETUP and GO
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### Question 5

If a model of humans is constructed where the humans are meta-agents, what agents might make up the meta-agents?

- A. organizations, businesses, and nations
- B. organs, tissues, and cells
- C. other humans
- D. turtles all the way down!

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**Question 6**

In the preferential attachment model, how does a new node choose which node to link to?

- A. uniformly randomly
  - B. in the same a regular lattice is constructed
  - D. it doesn't, the links are decided at the beginning of the model growth
  - E. It chooses nodes proportionally to the number of links that node already has
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**Question 7**

What is the tool that is used to run models without the user interface?

- A. headless running of BehaviorSpace
  - B. System Dynamics Modeler
  - C. SETUP and GO
  - E. you can't do this
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**Question 8**

What environment type did we use in the diffusion model in Unit 4?

- A. a hex grid
  - B. a network model
  - D. a GIS model
  - E. a 3D model
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**Question 9**

What kind of agent cognition results in agents often taking different actions given the same inputs?

- A. adaptive cognition
  - C. reflexive cognition
  - D. goal-based cognition
  - E. utility-based cognition
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**Question 10**

Which of the following reporters in NetLogo returns an agentset?

- A. TURTLES WITH [XCOR → 5]
- B. NEIGHBORS
- C. TURTLES IN-RADIUS 5
- D. All of these return agentsets