

Topic 16 Machines and Computational Models – Worksheet©2025 Chris Nielsen – www.nielsenedu.com**1. Vocabulary**

a.	computer			
A machine that takes some kind of input from its surroundings, processes the input according to given rules, and provides some kind of output .				
b.	embedded system			
A device with a computer inside that is configured for a dedicated purpose.				
c.	computational model			
A computational model defines the components of a system and the rules of behaviour.				
A computational model is designed to be simulated on a computer to predict behavior.				

2. Short Answer

- a. What is the difference between a **computer** and a **functional machine**. (2)

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- b. Give an example of **negotiation** in technological devices. (1)

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- c. From algorithms you have used in this course, give an example where an algorithm can be implemented using a sub-algorithm. (2)

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- d. In a simulation of the famous game theory thought experiment “The Prisoner’s Dilemma”, explain why each prisoner may be considered an *agent*. (4)

- e. In what ways may each individual cell in “Conway’s Game of Life” be considered an *agent*? (2)

- f. In what ways may each individual cell in “Conway’s Game of Life” be considered **not** an *agent*? (2)

- g. Can an *algorithm* be a *computational model*? Explain why. (An example may be helpful.) (3)
