

Chapter 11 - Study Guide

1. Define _____ within the context of Artificial Intelligence.
 - a. Agent
 - b. Procedural knowledge
 - c. Declarative knowledge
 - d. The Turing Test
2. How do the requirements of a video/vision system on a robot differ if the robot itself uses them to control its activities rather than relaying them to a human who controls the robot remotely?
3. Identify the ambiguities involved in translating the sentence "They are racing horses." In other words, what different meanings could this sentence have? How would a computer figure out what was meant?
4. Explain the difference between supervised and unsupervised learning in artificial intelligence. Make sure to compare these concepts to human learning in your explanation.
5. Many cultures today take at least some responsibility toward helping to retrain those whose jobs have been made redundant by advancing technology. What should/can society do as technology makes more and more of our capabilities redundant?
6. New technologies become available to aid students learn materials, such as web-based interactive lessons and automatic essay grading. Do you feel this technology attempts to replace teachers? What are the pros and cons of these technologies?
7. Suppose you wanted to train a neural network to do _____ (eg. Decide who gets a mortgage, facial recognition of employees, determine whether you should buy/sell/hold a particular stock]. Use the concepts from the chapter to describe the process(es) you might use to create the network?
8. Suppose you have been given a neural network to do _____. How could you verify that it is "trustworthy?"
9. Consider the game of [Mario Brothers|Fortnight|Candy Crush]. What information would you want to use to train an AI to play this game? What heuristic could you use to determine which of two agents is better [or which of two situations is better]?
10. When you are texting on your phone the program suggests three word choices for possible next words in your sentence [auto-complete]. How would you build such a system? What would you do to test the system? [To get credit for this question you should make sure your answer contains concepts/vocabulary from the chapter]