COMS 4701 – Homework 1 – Conceptual

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Question 1
C

Question 2

A, C

Question 3
B, C, F

Question 4
1) Robotics, Spoken Language processing, computer vision, Planning

2)

Agent Type	Performance Measure	Environment	Actuators	Sensors
Automated DishWasher	Number of clean plates fast	Countertop, sink and stove	Wheels to turn the robot, start, stop	Camera, radar to sense whether the plate is clean or not (plays tune)

3)
Partially observable – dishwashing agent with only a local sensor to sense the current plate cannot possibly know if future plates have dirt on it.
Single Agent – only a single dishwashing agent
Deterministic – machine will only clean next plate once current plate is clean. Machine will only go to the next environment once it has no more cleaning to do in current environment
Discrete – actions can be described in discrete time points. At each time point, item is either clean or not clean (state) and agent has to clean or not clean (action).

4) Add accelerator to change the speed at which agent cleans
Add different types of cleaning ability – deep cleaning, fast wash etc. If deep cleaning, then accelerator won't work
Add different tunes to make it easier for user to tell when the dishwashing machine is done for people with hard of hearing