1(a).
Performance: collect samples, explore terrain, analyze sample and terrain

Environment: surface of Mars, radiation, and particles (electron, neutron, …) from Sun, less gravity

Actuators: sample collection device, analysis device, signal transmitter

Sensors: sonar, GPS, light sensors, 接收訊號的天線, camera for taking photos

1(b).
Performance: 來回擊球次數、擊球速率、球飛行軌跡
Environment: 水泥牆、球拍、網球
Actuators: 握球拍的手臂、能左右移動的腳
Sensors: sonar、eyes(or camera for detecting the ball)

2.
For 1(a), partially observable/stochastic/sequential/dynamic/continuous/single agent
For 1(b), fully observable/stochastic/episodic/dynamic/continuous/single agent

3(a).
No, since the agent will never stop when both squares A and B are clean, and it will be penalized for many points.

3(b).
Yes, if we memorize the state whether A, B blocks are dirty or not. If a block is dirty, do the same thing(suck) as simple reflex agent. If moved out from a clean block, mark the block as clean and memorize it. If all the blocks are clean, then the agent should stop.

3(c).
If the agent knows the status of all squares, then it can choose no-op action on the clean square and suck on the dirty square to minimize the penalized points.
If the agent must travel to the dirty square somewhere, it should choose the shortest path to prevent losing points.