REVIEW EXERCISE 01

Question 01. Consider the following activity. A little boy is playing hide-and-seek with his friends in the playground. He is the seeker that attempts to locate all hiders, and he will yell "Found" every time he catches a hider.

Specify the PEAS description for the task environment of the above activity.

Performance measure: The seeker successfully locates all hiders

Environment: Friends as hiders, playground (trees, bushes, toys, etc.)

Actuators: Legs (to move), hands (to lift objects while locating hiders, to touch the hider), mouth (to yell)

Sensors: Eyes (to see), ear (to hear rustle noises made by hiders)

Question 02. Identify the following task environment properties of the above task. Do not forget to give your explanation for every dimension.

Fully observable vs. Partially observable. Although the seeker does not see the hiders, he may access any legal location in the playground to find the hiders, fully using his percepts.

Single-agent vs. **Multi-agents.** One seeker and at least one hider.

Deterministic vs. **Stochastic.** The seeker may incorrectly predict where the hiders are.

Episodic vs. **Sequential.** Locating a hider is independent from locating another hider. However, the goal is to locate **ALL** hiders.

Question 03. Consider the following activity. A little boy is playing blind man's bluff with his friends in the playground. He is the catcher that attempts to touch any hider to switch their roles, while the hiders shout and laugh to distract the catcher.

Specify the PEAS description for the task environment of the above activity.

Performance measure: The catcher successfully catches one hider to switch his role

Environment: Friends as hiders, playground (trees, bushes, toys, etc.)

Actuators: legs (to move), hands (to and catch one hider)

Sensors: ear (to hear noises made by hiders), hands (to touch objects)

Question 04. Identify the following task environment properties of the above task. Do not forget to give your explanation for every dimension.

Fully observable vs. **Partially observable.** The catcher is blindfolded; he may be aware of the hiders, but he does not know their exact locations.

Single-agent vs. **Multi-agents.** One catcher and at least one hider.

Deterministic vs. **Stochastic.** The catcher cannot surely guess where the hiders are; his prediction may be not accurate.

Episodic vs. Sequential. The catcher just needs to catch one hider. During the time, his activities may change suddenly, not following any specific pattern.