Answer 1:

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| --- | --- |
| Goal-based Agent | Utility-based Agent |
| It chooses an action which leads to the achievement of its goals. | It chooses an action which leads to the best expected utility. |
| It appears less efficient | It appears more efficient |
| It keeps track of the world state as well as  a set of goals it is trying to achieve. | It uses a model of the world, along with a  utility function that measures its preferences among states of the world. |
| It does not specify the appropriate tradeoff. | It specifies the appropriate tradeoff. |
| They are inadequate | They can still make rational decisions. |

Answer 2:

Fully Observable: From figure we can say that when the agent is fully observable if it has all the information to locate all the stars and all the squares in the puzzle, also sensors should know its own location.

Partially Observable: From figure we can say that the agent is partially observable if it only knows the information of the squares where it is currently located and positions of stars.

Deterministic: From figure we can say that the agent is deterministic if it knows on how to react on the actions based on the information it has as the stars and the squares remains at its own location.

Stochastic: From figure we can say that the agent is stochastic if the stars change it positions constantly.

Dynamic: From figure we can say that the agent is dynamic either the number of stars changes in the puzzle, or the location of stars changes.

Static: From figure we can say that the agent is static if everything in environment is not changing in other words its constant.

Sequential: From figure we can say that the agent is sequential if there is a memory storage in it which stores each action taken by the agent in the whole process of solving the puzzle.

Episodic: From figure we can say that the agent is episodic if the agent’s decision does not create impact on the future action due to the previous one.

Known: From figure we can say that the agent is known if it knows everything present in the environments such as actions, other sensors and more.

Unknown: From figure we can say that the agent is unknown if it does not know anything present in the environment.

Continuous: From figure we can say that the agent is continuous if the number of stars remains same after picking up a start, in other words when we pick up a star from one position another pops up at other location.

Discrete: From figure we can say that the agent is discrete if the stars do not increase after picking one from the puzzle.

Single-Agent: From figure we can say that the agent is single-agent if the environment has only one agent in it.

Multi-Agent: From figure we can say that the agent is multi-agent if the environment has multiple agents in it which does its work independently.