

Q.1) Rationality refers to ability of an agent to make divisions that maximizes its expected utility or achieves

2) Rationality is about making best possible divisions given in a circumstances.

3) An agent is considered rational if consistently chooses actions that expected to max utility or access.

e.g.) Playing chess-agent.

Q.2) Nature of environments in which intelligent agents operate depend on

- a) Complexity - Env can range from simple , deterministic env with a few actions.
- b) Dynamics - Env may be static , where agent actions to complete unto about current state .
- c) Determination - Env may be deterministic where the outcome of action is fully determined by current state .

eg : Stock market .

Q.3) 5 main components of intelligent agent

1) Perception - Involves sensing of the environment

2) Reasoning - Agents use reasoning mechanism to make more accurate decisions

3) Actuation - Once the division is made the agent must act upon actuators

4) Knowledge - Agents posses knowledge about environment themselves.

5) Learning - Intelligent agents have the capability of constant learning Based on experience and training.

Q.4) i) A Role of P3 agent

- 1) Problem Solving agents operate independently making divisions
 - 2) These agents are designed to efficiently explore & navigate problems.
 - 3) They can handle a wide range of problem types and complexity from simple puzzles to complex real world scenarios
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- 2) Formulation of problem
 - 1) Involves abstracting real world scenarios
 - 2) Problem are kept in way that capture essential elements