

**Question - 1: What is the primary aim of Knowledge Representation and Reasoning?**

- a. To enable computers to process vast amounts of data efficiently.
- b. To develop advanced machine learning algorithms.
- c. To understand the nature of intelligence and cognition to simulate human-like abilities in computers.
- d. To create complex robotic systems for automation.

**Question - 2: Which type of reasoning is described as "jumping to conclusions based on some default assumptions" when information is insufficient, potentially leading to unsound conclusions that may need to be withdrawn?**

- a. Deductive reasoning
- b. Abductive reasoning
- c. Epistemic reasoning
- d. Default reasoning

**Question - 3: In propositional logic, what is an "atom"?**

- a. A logical connective like 'and' or 'or'.
- b. A formula composed of multiple propositions.
- c. The smallest unit to which a truth value (true/false) can be assigned.
- d. A symbol representing a numerical value.

**Question - 4: Which of the following connectives is considered a unary propositional connective?**

- a. Conjunction ( $\wedge$ )
- b. Implication ( $\rightarrow$ )
- c. Disjunction ( $\vee$ )
- d. Negation ( $\neg$ )

**Question - 5: A propositional formula F is a tautology if:**

- a. At least one interpretation satisfies F.
- b. F can be reduced to a Conjunctive Normal Form (CNF).
- c. Every interpretation satisfies F.
- d. Its negation ( $\neg F$ ) is satisfiable.

**Question - 6: What does it mean for a propositional formula F to be satisfiable?**

- a. F is true for all possible interpretations.
- b. There exists at least one interpretation that satisfies F.