AI -Assignment 3

Q1) Discuss the following terms

1)prepositional logic 2) logic programming 3) inference rules

Q2) Discuss various approaches and issues in Knowledge representation?

Q3) What is knowledge representation? Discuss the concept of Forward & Backward reasoning for AI systems?

Q4) What is First Order Logic in AI. Elaborate the terms Syntax and Semantics with appropriate examples?

Q5) Differentiate between forward and backward chaining?

Q6) What is Quantifiers in First-order Logic? Compare and Contrast Universal quantifier and Existential quantifier with suitable example?

Q7) Consider the following sentences.

- John likes all kinds of food.
- Apples are food.
- Chicken is food.
- Anything anyone eats and isn't killed by is food.
- Bill eats peanuts and is still alive.
- Sue eats everything Bill eats.

Translate these sentences into formulas in predicate logic.

Q8) Distinguish between predicate and propositional logic with suitable example?

Q9) List various components of natural language understanding process. Describe syntactic analysis and semantic analysis in brief?

Q10) Represent the following statements in predicate logic;

- Marcus tried to cheat Caesar.
- All Pompeian's were Roman.
- All Romans were either loyal to Caesar or hated him.
- Everyone is loyal to someone.
- People only try to co-operate rulers they are not loyal to.

Q11) What are the Heuristics? What is its importance? Describe its types with the help of examples. Also justify the sentence "Heuristics are not sure to lead to a situation yet the field of AI is full of them?

Q12) There is Monkey at door in a room. In the middle of the room, a bunch of banana is hanging from the ceiling. The monkey is hungry and wants to get the banana. But cannot stretch high enough from the floor. At the window of the room there is a box.

Represent the information used in the above-mentioned problem in predicate logic

Q13) Explain state space approach for solving any Al problem. How Al handles decision under uncertainty?

Q13) Define Expert system. Explain the architecture of expert system in detail with a neat diagram and an example?

Q14) Discuss the applications of Natural Language Processing?

Q15) What is Baye's rule? Discuss its use in Al systems for probabilistic inference.?