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**Assignment 2**

Subject: Artificial Intelligence Subject Code: AI 302T

Class: B.Tech CSE 3rd Faculty Name: Neha Jain, Reeta Mishra

Date of Issue: 26/2/24 Date of Submission: 4/3/24 Total Marks: 20

**All questions are compulsory to attempt.**

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| S.No. | Questions | Max Marks | CO | BL |
| 1 | Define knowledge representation in artificial intelligence. Explain the importance of representing knowledge in a structured format and provide examples of different knowledge representation techniques. | 3 | CO2 | L2 |
| 2 | Given a set of statements, apply predicate logic to represent the relationships and conditions within the statements. Identify variables, predicates, and quantifiers in your representation. | 4 | CO2 | L3 |
| 3 | Discuss the frame problem in knowledge representation. Explain why it is a challenge and how it affects the representation of actions and their consequences in AI systems. | 3 | CO2 | L2 |
| 4. | Design a knowledge frame to represent a specific concept, considering the Isa relationship and defining relevant attributes and relationships. Provide an example to illustrate the application of knowledge frames. | 5 | CO2 | L3 |
| 5. | Evaluate the use of symbolic reasoning under uncertainty, non-monotonic reasoning, and statistical reasoning in different AI applications. Analyze the strengths and limitations of each reasoning strategy and discuss scenarios where one might be more suitable than the others. | 5 | CO2 | L4 |