SAPTHAGIRI NPS UNIVERSITY
UNMATCHED EXCELLENCE, UNLIMITED POTENTIAL

Course Title: Fundamentals of AI and ML

Course Code: 24BTPHY106

Question Bank -Module 3

2 marks

1. Define logical agent.
2. Define Knowledge based agent
3. Illustrate the architecture of knowledge-based agent
4. Define the following terms associated with a knowledge based agent: a) sentence b)Inference
5. List the operations performed by a knowledge based agent.
6. State the the purpose of the TELL operation in a knowledge-based agent?
7. Specify the purpose of the Make-Percept-Sentence function in the KB-Agent function?
8. Cite the limitations of propositional logic
9. State Generalized Modus Ponens Rule.
10. List the conditions for Unification in First Order Logic.
11. Define the term predicate in First-Order Logic
12. Convert the following to First Order Logic
    a) *Every man respects his parent.*
    b) *Some boys play cricket*
13. Convert the following to Propositional Logic
    a) The light is on and the door is open
    b) If I study, then I will pass the exam

5 marks

1. Describe about various levels of knowledge-based agent
2. With neat diagram, explain the architecture of knowledge-based agent
3. Describe about the operations performed by Knowledge-Based Agent

4. State the PEAS description of Wumpus World
5. Describe the properties of Wumpus World Environment
6. Differentiate atomic proposition and Compound Proposition in Propositional Logic with example.
7. Differentiate between propositional logic and first order logic.
8. Describe Universal quantifiers with an example.
9. Describe Existential quantifiers with an example.
10. With the help of truth table explain the conjunction and disjunction connectives in propositional logic.
11. With the help of examples explain the implication and biconditional connectives in propositional logic.
12. Describe unification in First Order Logic with example.
13. Explain about Resolution.
14. Explain about forward chaining and its properties.
15. Explain about backward chaining and its properties

10 marks

1. Describe propositional logic, its syntax and logical connectives with examples.
2. Describe First Order logic, its syntax and elements with examples
3. Explain about forward chaining and backward chaining.
4. Explain about FOL inference rules.
5. Explain knowledge engineering in First-Order Logic.