INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500043

ELECTRONICS AND COMMUNICATION ENGINEERING

TUTORIAL QUESTIONBANK

Course Title	**ARTIFICIAL INTELLIGENCE**			
Course Code	AEC803			
Programme	B.Tech			
Semester	VI			
Course Type	Elective			
Regulation	IARE - R16			
Course Structure	Lectures	Tutorials	Practicals	Credits
	-	-	-	-
Course Coordinator	Mr. V Naresh Kumar, Assistant Professor			
Course Faculty	Mr. V Naresh Kumar, Assistant Professor			

OBJECTIVES

The course should enable the students to:

I. Understand and study the fundamental concepts of artificial intelligence in problem solving.
II. Explore the methods of agents and reasoning patterns.
III. Introduce the concepts of knowledge representation and learning.
IV. Analyze and solve statistical learning methods using AI techniques.

PART – A (SHORT ANSWER QUESTIONS)

S. No	Questions	Blooms Taxonomy Level	Course Learning Outcome
	UNIT – I **WHAT IS ARTIFICIAL INTELLIGENCE**		
1	What is AI? Write short notes on AIoT.	Remember	AEC803.1
2	Write short notes on AI.	Remember	AEC803.1
3	What is an AI technique?	Remember	AEC803.1
4	Write the underlying assumption?	Understand	AEC803.1
5	What is Problem spaces and search?	Remember	AEC803.2
6	Define the problem as a state space search.	Understand	AEC803.3
7	What is a production system?	Understand	AEC803.3
8	Write Short notes on production systems and Problem-solving.	Remember	AEC803.3
9	What are Uninformed search strategies?	Remember	AEC803.3
10	What are Informed search strategies?	Remember	AEC803.3
	PART – B (LONG ANSWER QUESTIONS)		
1	What are the basic components of AI problem solving methodology? Describe them in detail with an example.	Understand	AEC803.1
2	What is AI , what are the importance of AI with an example	Remember	AEC803.2
3	Explain briefly about problem of building a system	Remember	AEC803.3
4	Discuss and Explain the levels of the model, the underlying assumption	Understand	AEC803.3
5	Explain problem spaces and search with examples.	Understand	AEC803.3
6	Explain the problem as a state space search, production systems, production systems; Problem-solving with examples.	Remember	AEC803.2
7	Explain Uninformed search strategies, Informed search strategies with examples.	Understand	AEC803.2
8	Discuss and explain Heuristic search strategies with examples.	Understand	AEC803.2
9	Explain backtracking search for csps.	Understand	AEC803.2

10	Explain local search algorithms and optimization problems with an examples.	Understand	AEC803.3
UNIT-II KNOWLEDGE AND REASONING			
PART – A (SHORT ANSWER QUESTIONS)			
1	What is Logical agents and , knowledge-based agents	Understand	AEC803.4
2	What is the wumpus world and propositional logic	Remember	AEC803.4
3	What is reasoning patterns in propositional logic and agents based on propositional logic?	Remember	AEC803.4
4	What is First-order logic?	Remember	AEC803.4
5	Explain syntax and semantic of first-order logic.	Understand	AEC803.4
6	What is knowledge engineering in first-order logic?	Understand	AEC803.5
7	Explain Inference in first-order logic?	Remember	AEC803.5
8	Explain Propositional vs first-order inference with example.	Remember	AEC803.5
9	Explain Heuristic search methods generate and test algorithm.	Understand	AEC803.4
10	Explain forward chaining, backward chaining and resolution.	Understand	AEC803.4
PART – B (LONG ANSWER QUESTIONS)			
1	Discuss in detail about Logical agents, knowledge-based agents with examples.	Remember	AEC803.4
2	Explain the wumpus world and propositional logic.	Understand	AEC803.5
3	Explain reasoning patterns in propositional logic and agents based on propositional logic with suitable examples.	Understand	AEC803.4
4	Discuss with First-order logic, syntax and semantic of first-order logic with examples.	Remember	AEC803.5
5	Explain the knowledge engineering in first-order logic, Inference in first-order logic.	Understand	AEC803.6
6	Discuss in detail about propositional vs first-order inference.	Remember	AEC803.6
7	Explain unification and lifting with examples.	Understand	AEC803.6
8	Write Short notes on i) wumpus world and propositional logic ii) syntax and semantic of first-order logic iii) unification and lifting	Remember	AEC803.5
9	Explain backward chaining and resolution with examples.	Remember	AEC803.6
10	Explain forward chaining, backward chaining and resolution with examples.	Remember	AEC803.6
UNIT-III KNOWLEDGE REPRESENTATION			
PART – A (SHORT ANSWER QUESTIONS)			
1	What is Ontological engineering?	Understand	AEC803.7
2	Explain categories and objects	Remember	ACS510.7
3	What are actions, situations and events?	Understand	AEC803.7
4	Explain mental events and mental objects.	Remember	AEC803.8
5	What is internet shopping world	Understand	AEC803.8
6	Explain reasoning systems for categories	Remember	AEC803.7
7	What is a truth maintenance system?	Understand	AEC803.9
8	Explain Uncertain knowledge and reasoning	Understand	AEC803.7
9	Discus Uncertainty and acting under uncertainty	Remember	AEC803.7
10	What is the basic probability notation	Understand	AEC803.8
PART – B (LONG ANSWER QUESTIONS)			
1	Discuss in detail about Ontological engineering.	Remember	AEC803.7
2	Explain objects, actions, situations and events with examples.	Understand	AEC803.8
3	Explain mental events and mental objects suitable examples.	Understand	AEC803.9
4	Discuss with the internet shopping world, truth maintenance systems.	Remember	AEC803.7
5	Explain Uncertain knowledge and reasoning.	Remember	AEC803.7
6	Explain Uncertainty, acting under uncertainty.	Understand	AEC803.8
	Explain basic probability notation with example.		
7	Explain reasoning systems for categories.	Remember	AEC803.8
8	Explain Ontological engineering and categories with suitable	Understand	AEC803.9

	examples.		
9	Explain briefly about categories with suitable examples.	Remember	AEC803.8
10	Explain truth maintenance systems.	Understand	AEC803.8
UNIT – IV **LEARNING**			
PART – A (SHORT ANSWER QUESTIONS)			
1	What is Learning from observations	Remember	AEC803.10
2	Why forms of learning	Remember	AEC803.10
3	Explain the axioms of probability	Understand	AEC803.10
4	Discuss inference using full joint distributions	Remember	AEC803.11
5	What is mean by independence	Remember	AEC803.11
6	Explain, Baye's rule and its use	Remember	AEC803.12
7	What is the Inductive learning	Understand	AEC803.12
8	Explain Learning decision trees	Understand	AEC803.12
9	What is ensemble learning	Remember	AEC803.12
10	Why learning works	Remember	AEC803.12
11	Explain Computational learning theory	Understand	AEC803.11
PART – B (LONG ANSWER QUESTIONS)			
1	Explain different forms of learning and Learning from observations.	Understand	AEC803.12
2	Explain the axioms of probability and inference using full joint distributions	Remember	AEC803.10
3	Explain independence and Baye's rule and its use.	Remember	AEC803.12
4	Explain in detail about the importance of inductive learning.	Understand	AEC803.11
5	Explain Learning decision trees and ensemble learning.	Understand	AEC803.11
6	Why learning works with suitable examples.	Remember	AEC803.10
7	Explain in detail about computational learning theory	Understand	AEC803.10
8	Explain Learning from observations with example.	Understand	AEC803.11
9	Write short notes on Baye's rule, axioms of probability and computational learning theory.	Understand	AEC803.12
10	Distinguish between forms of learning and learning from observations	Remember	AEC803.12
UNIT-V **STATISTICAL LEARNING METHODS**			
PART – A (SHORT ANSWER QUESTIONS)			
1	What is meant by knowledge in learning?	Understand	AEC803.14
2	Express in detail a logical formulation of learning.	Remember	AEC803.14
3	Write in detail about knowledge in learning.	Remember	AEC803.13
4	What are Neural networks?	Remember	AEC803.13
5	What is the Fuzzy logic system?	Understand	AEC803.13
6	Write a short note on crisp sets.	Understand	AEC803.14
7	Explain fuzzy sets and some fuzzy terminology.	Remember	AEC803.13
8	What is fuzzy logic control?	Remember	AEC803.14
9	Explain about sugeno style of fuzzy inference processing?	Understand	AEC803.13
10	Write a short note on fuzzy hedges and α cut threshold?	Understand	AEC803.13
PART – B (LONG ANSWER QUESTIONS)			
1	Explain Knowledge in learning, A logical formulation of learning and knowledge in learning	Remember	AEC803.14
2	Discuss in detail about Neural networks with examples.	Understand	AEC803.14
3	Explain in detail about Fuzzy logic systems with examples.	Understand	AEC803.13
4	Explain fundamental aspects on crisp sets and fuzzy sets.	Remember	AEC803.15
5	Explain fuzzy terminology, fuzzy logic control.	Understand	AEC803.13
6	Discuss and Explain sugeno style of fuzzy inference processing.	Understand	AEC803.15
7	Explain in detail about fuzzy hedges, and α cut threshold.	Remember	AEC803.15

8	How logical formulation of learning improving in learning process.	Understand	AEC803.15
9	Discuss briefly about Knowledge in learning, and write its merits and de-merits.	Understand	AEC803.15
10	Write short notes on sugeno style, fuzzy logic control and statistical learning methods.	Remember	AEC803.14

HOD, ECE