(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, Dec-21/Jan-22

Artificial Intelligence

(CSE & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	a. With Neat Schematic Diagram, Explain the Working Methodology of Components of an Agent Program.	[7M]
	b. Explain the following Uninformed Search Strategies with Suitable Examples: i. Breadth First Search ii. Iterative Deeping Depth First Search	[7M]
	OR	
2	a. Define Agent Program. Explain the Following Agent Programs with Respect to Intelligent Systems i. Simple Reflex Agents ii. Model-Based Reflex Agent	[7M]
	b. Explain the following Heuristic Search Strategies with Suitable Examples: i. Hill Climbing ii. Generic Best-First Algorithm	[7M]

SECTION-II

3	a. Explain Stochastic Search Algorithm	[7M]
	b. Discuss the Models for First Order Logic	[7M]
	OR	
4	a. Explain Alpha-Beta Algorithm and Its Move Ordering.	[7M]
	b. Explain the Following Syntax and Semantics of First Order Logic i. Atomic Sentences ii. Complex Sentences	[7M]

SECTION-III

5	a. Explain Mental Events and Mental Objects	[7M]
	b. Explain Non-Monotonic Reasoning with an Example.	[7M]
	OR	
6	Define Bayesian Network. Explain the Semantics of Bayesian Network.	[14M]

SECTION-IV

7	Explain the Learning from Decision Trees and How Attributes are Selected for Nodes in the Decision Trees	[14M]
	OR	
8	a. Explain the Following Forms of Learning i. Supervised Learning ii. Unsupervised Learning	[7M]
	b. Explain Learning through Problem Solving with an Example	[7M]

SECTION-V

9	Explain the Following with respect to Representing and Using Knowledge Domain: i. If-Then Rules ii. Semantic Networks	[7M] [7M]
	OR	
10	a. Explain the Knowledge Acquisition and Inference Engine in Expert System.	[7M]

Code No: R17A1204 R17

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, July/August 2021

Artificial Intelligence

(CSE & IT)

Roll No

Time: 3 hours **Max. Marks: 70**

Answer Any Five Questions

All Questions carries equal marks.

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1	a) Write completeness, optimality, time complexity and space complexity for all uninformed search strategies.	[7M]
	b) Compare and contrast DFS and BFS.	[7M]
2	Explain simple reflex agents and goal-based agents with an example.	[14M]
3	Discuss in detail about the A* algorithm using a suitable example	[14M]
4	a) Explain backward chaining algorithm with an example.	[7M]
	b) Discuss probabilistic reasoning.	[7M]
5	How to represent knowledge in uncertain domains? Discuss in detail.	[14M]
6	Discuss probability concepts used for uncertainty reasoning.	[14M]
7	a) Discuss learning by taking advice.	[7M]
	b) Explain in detail about decision trees.	[7M]
8	a) Discuss in detail about components of an expert systems.	[7M]
	b) Differentiate Human system and Expert system.	[7M]

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Code No: R17A1204 R17

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Regular Examinations, February 2021

Artificial Intelligence

(CSE & IT)

Roll No

Time: 2 hours 30 min Max. Marks: 70

Answer Any Five Questions

All Questions carries equal marks.

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1 How breadth first search works? What are the features and applications of breadth first search? [14M]

2 a) Explain the properties of environments. [7M]

b) Discuss Bayes theorem [7M]

3 Define alpha-beta pruning. Explain alpha beta search algorithm for two-ply game. [14M]

4 Explain A' and minimax algorithm with an example. [14M]

5 Discuss knowledge representation schemes. [14M]

6 Explain in detail about Bayesian Networks [14M]

7 What is Rote learning? Explain rote learning with example. [14M]

8 a) What is expert system? Explain characteristics and capabilities of expert Systems. [7M]

b) Discuss benefits of expert systems. [7M]

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Code No: R18A1205 R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Supplementary Examinations, July/August 2021

Artificial Intelligence

(EEE, CSE & IT)

Roll No

Time: 3 hours Max. Marks: 70

Answer Any Five Questions

All Questions carries equal marks.

***

1 Discuss about the advantage of heuristic search techniques and explain generic best first search strategy [14M]

2 a. Define Artificial Intelligence. Explain the techniques of A.I. Also describe the characteristics of Artificial Intelligence. [7M]

b. Discuss about how backtracking search strategy performs. [7M]

3 Describe the mini max algorithm with an example. [14M]

4 a. Discuss about backward chaining algorithm [7M]

b. Describe probabilistic reasoning with example. [7M]

5 Explain how to represent Knowledge in an Uncertain Domain. [14M]

6 a. Discuss about Knowledge Representation Issues in detail. [7M]

b. Explain rule based methods for uncertain reasoning. [7M]

7 a. Explain how to do learning from examples. [7M]

b. Describe the role of information gain in decision tree learning. [7M]

8 Explain the Expert System Architecture with the help of a neat diagram [14M]

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Code No: R18A1205 R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular Examinations, February 2021

Artificial Intelligence

(EEE, CSE & IT)

Roll No

Time: 2 hours 30 min Max. Marks: 70

Answer Any Five Questions

All Questions carries equal marks.

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1	Explain about uninformed search strategies with examples	[14M]
2	a) Define Heuristic search? What are the advantages of Heuristic search?	[7M]
	b) Write about any one Heuristic technique	[7M]
3	Discuss A* algorithm in detail.	[14M]
4	Give a brief note on Alpha-Beta Pruning	[14M]
5	Explain how to handle uncertain knowledge in detail.	[14M]
6	Write about the Belief Bayesian Networks	[14M]
7	a. . Discuss about Winston's Learning Program.	[7M]
	b. Briefly describe learning in Problem Solving	[7M]
8	Discuss various ways of knowledge acquisition.	[14M]

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R18

Code No: R18A1205

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Supplementary Examinations, November 2022

Artificial Intelligence

(EEE, CSE & IT)

Roll No										3	3

Time: 3 hours Max. Marks: 70

Note: This question paper Consists of 5 Sections. Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1 Define Artificial Intelligence. Explain the techniques of A.I. Also describe the characteristics of Artificial Intelligence [14M]

OR

2 A Explain real-world AI problems with examples [4M]

B Explain any two Heuristic Search algorithms? [10M]

SECTION-II

3 Explain min-max search and Alpha-Beta Pruning with examples [14M]

OR

4 What is First Order Logic? State and Prove Baye's Theorem and mention its applications? [14M]

SECTION-III

5 Write down logical representations for the following sentences suitable to use with Generalized Modus Ponens: [14M]

(a) Horses, cows and pigs are mammals

(b) An offspring of a horse is a horse

(c) Bluebeard is a horse

(d) Offspring and parent are inverse relations

(e) Every mammal has a parent. Draw the proof tree generated by an exhaustive back-ward chaining algorithm for the query ∃h Horse(h).

OR

6 Explain how to resolve Uncertainty and Bayesian Belief Network with an example [14M]

SECTION-IV

7 Discuss the issues to be addressed in order to extend decision tree induction to a wide variety of platforms. [14M]

OR

8 Explain Rote Learning, Learning by Taking Advice, Learning in Problem Solving with a Real world Example [14M]

SECTION-V

9 With the help of a neat diagram, explain the Expert System Architecture. List its Applications [14M]

OR

10 What is Shell in Expert System? Discuss in detail about Shell and Knowledge Acquisition Techniques? [14M]

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Code No: R20A0513 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular Examinations, December 2022

Artificial Intelligence

(CSE, IT, CSE-CS, CSE-DS, CSE-IOT)

Roll No	2	0	N	3	1	A	6	2	2	1

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	*A*	List and explain various AI Languages.	[7M]
	B	What are the basic components of AI problem solving methodology? Illustrate with an example.	[7M]
		OR	
2	*A*	Illustrate the heuristic Hill Climbing Algorithm with an example.	[7M]
	B	Explain A* Algorithm with example.	[7M]

SECTION-II

3	*A*	Discuss Alpha-Beta Pruning and its advantages over min-max method.	[10M]
	B	Explain the Syntax and Semantics of Propositional Logic.	[4M]
		OR	
4	*A*	Explain forward chaining and backward chaining	[7M]
	B	Compare and contrast the two variants of Logic-Predicate and Propositional.	[7M]

SECTION-III

5	*A*	Explain the issues in Knowledge Representation. Define Inheritance in Semantic Net.	[8M]
	B	Differentiate between monotonic and non monotonic reasoning.	[6M]
		OR	
6	*A*	Explain acting under uncertainity domain	[5M]
	B	Explain Bayesian Networks?	[9M]

SECTION-IV

7	*A*	Differentiate between Supervised Learning and Unsupervised Learning.	[4M]
	B	Discuss Winston's learning briefly with neat sketch.	[10M]
		OR	
8	*A*	Describe the role of information gain in Decision Tree Learning.	[7M]
	B	Explain decision tree algorithm.	[7M]

SECTION-V

9	*A*	Explain the Phases in Building Expert System.	[9M]
	B	Explain the Applications of the Expert Systems.	[5M]
		OR	
10	*A*	List the Characteristics of Expert Systems. Classify various Expert System shells and tools.	[8M]
	B	Explain about MYCIN Expert system in detail.	[6M]

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R18

Code No: R18A1205

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22

Artificial Intelligence

(EEE, CSE & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

SECTION-I

1	Explain the Heuristic Search Techniques. List and explain the applications of Artificial Intelligence	**[14M]**
	OR	
2	What is a Breadth first search of the search tree? Write an algorithm to conduct Breadth first search explain with example and also mention advantages and disadvantages.	**[14M]**

SECTION-II

3	Give a brief note on Alpha-Beta Pruning. How Mini max Search is useful and implemented.	**[14M]**
	OR	
4	How Probabilistic Reasoning is useful in Basic Knowledge Representation. Compare Propositional Logic & First-Order Logic with their features	**[14M]**

SECTION-III

5	Explain in detail about Other Knowledge Representation Schemes along with its advantages and disadvantages.	**[14M]**
	OR	
6	Discuss about Acting Under Uncertainty? Analyze the Bayesian Belief networks with clear examples.	**[14M]**

SECTION-IV

7	Illustrate Learning by Taking Advice & Learning in Problem Solving by considering two real time examples	**[14M]**
	OR	
8	Describe the role of information gain in decision tree learning	**[14M]**

SECTION-V

9	With the help of a neat diagram, explain the Expert System Architecture. List its Applications	**[14M]**
	OR	
10	Explain Various Phases in building Expert Systems. Write the procedure for Knowledge Acquisition by using Expert Systems.	**[14M]**

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