	F	220
Code M	No: R20A0561 IALLA REDDY COLLEGE OF ENGINEERING & TECHNOLO (Autonomous Institution – UGC, Govt. of India)	GY 2
	II B. Tech II Semester Supplementary Examinations, December 200 Artificial Intelligence	
	Roll No	
Time	3 hours Max. Marks: 70	Question
Note: from o	This question paper Consists of 5 Sections. Answer FIVE Questions, Choosing ONE each SECTION and each Question carries 14 marks.	Question
	SECTION-I	[8M]
1 a.	Provide a state space for the game of cness.	[6M]
b.	Describe different control strategies used in problem solving	[otra]
	OR In the second bill climbing algorithm	[6M]
2 a.	Write the algorithm for steepest ascent thit childing algorithm.	[8M]
D.	SECTION-II	ICM
3 a.	Transform the following to conceptual dependencies:	[OM]
	I gave pen to my friend	
	Rama eat ice cream	
	I borrowed book from your friend While going home,	
	I saw a frog	TONAL
b.	Explain Alpha – Beta Pruning	[8M]
	OR l'unit le le cie	IAMI
4	a) Justify the need for computable functions and predicates in logic.	[4M]
	b) What is the significance of knowledge representation.	[6M]
	SECTION-III	
5	Write a short notes on the following	
	a) reasoning	[4M]
	b) Monotonic reasoning	[5M]
	c)Non – Monotonic reasoning	[5M]
	OR	IGMU
6 a.	Compare contrast conventional programs and rule based systems	ISMI
b.	Elucidate various knowledge level representations involved in reasoning process	[owi]
	SECTION-IV	
7	Write short notes on the following:-	14M
	a) Route learning	[3M
	b) Induction	Page 1 of 2

	c) Learning from annual	
	d) Decision Trees	[3M]
	· · · · · · · · · · · · · · · · · · ·	[4M]
0 -	OR OR	
o a.	what is meant by "Learning"?	IEMI
b .	Describe the features of memorization and direct instruction?	[SM]
	SECTION-V	[9M]
9 a.	What are the prominent features of an expert system and describe their features in detail	[8M]
b.	Brief any 6 applications of expert systems	ICMD
	OR	lowi
0 a.	Explain about knowledge acquisition.	[7M]
b.	Explain with neat diagram the architecture of expert system and mention its	[7M]
	features.	(,

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Code	No: F	20A0513 TECHNOLOG & TECHNOLOG	GΥ
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	2	II B. Tech I Semester Regular Examinations, December 201	
		(CSE, IT, CSE-CS, CSE-DS, CSE-IOT)	
		Roll No 20H31A1249	
19112-004		Max. Marks: 70 max Choosing ONE	
Note:	This	question paper Consists of 5 Sections. Answer FIVE Questions, end of a section of the section of	
Quest	on Iro	m each SECTION and Gard V	17341
1	A	List and explain various Al Languages	[7M]
	B	What are the basic components of At problem solving	
	-	OR Ubsetrate the heuristic Hill Climbing Algorithm with an example.	[7M]
- 4:	B	Explain A* Algorithm with example SECTION-II	mail
3	A	Discuss Alpha-Beta Pruning and its advantages over min-max method.	[4M]
	B	Explain the Symax and Seminines of OR	[7M]
4	A	Explain forward chaining and oucgward chaining Compare and contrast the two variants of Logic-Predicate and Propositional.	[7M]
		SECTION-III Explain the issues in Knowledge Representation. Define Inheritance in	[8M]
D	and a	Semantic Net.	[6M]
	B	OR OR	[5M]
6	A B	Explain Bayesian Networks?	[9M]
7	Å	Differentiate between Supervised Learning and Unsupervised Learning.	[4M
	B	Discuss Winston's learning briefly with neat sketch. OR	A Sector
8	A	Describe the role of information gain in Decision Tree Learning.	[751
	D	SECTION-V	19M
9	A B	Explain the Phases in Building Expert Systems.	(5M
-10	240	OR List the Characteristics of Expert Systems. Classify various Expert System	[8N
		shells and tools.	16N
		Explain addit of Conversion and	
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ARTIFICIAL INTELLIGENCE

Unit ----1

- 1. Describe the four categories under which AI is classified with examples? Define Artificial Intelligence? List the fields that form the basis for AI?
- 2. Differentiate Informed & Uninformed search. Give examples?
- 3. Explain the following uninformed search strategies with examples.
 - (a) Breadth First Search.
 - (b) Depth-first with Iterative Deepening
 - (c) Depth First Search
 - (d) Depth Limited Search
- 4. Explain the following informed search strategies with examples.
 - (a) Hill Climbing
 - (b) Generic Best-First
 - (c) A*
- 5. Solve the following Crypt Arithmetic Problem.



Unit ----2

- 1. Give a brief note on minimax&Alpha-beta pruning with example and neat sketch?
- 2. Discuss Resolution&inference in first-order logic?
- 3. Write down the logical representations for the following sentences, suitable for use with Generalized Modus Ponens.
 - a) Horses, cows, and pigs are mammals.
 - b) An offspring of a horse is a horse.
 - c) Bluebeard is a horse.
 - d) Bluebeard is Charlie's parent.
 - e) Offspring and parent are inverse relations.
 - f) Every mammal has a parent.
- 4. Explain the difference between forward chaining and backward chaining?
- 5. **Discuss** a) Types of random variables
 - b) prior probability
 - c) posterior probability
 - d)Axioms of probability
- 6. What is AO* search? Explain various stages of AO* search with an example?
- 7. Explain Probability and Bay's Theorem.

ARTIFICIAL INTELLIGENCE

- 1. Explain different types of knowledge and Discuss how interaction of AI with real world and components involved in showing intelligent?
- 2. What are the issues in knowledge representation in AI?
- 3. Describe Bayes theorem? Define Non monotonic reasoning? What is Uncertainty Measure? Explain briefly?
- 4. Discuss the following knowledge representation schemes:
 - a) Logic representation
 - b) Semantic network
 - c) Frame representation
 - d) Production rules
- 5. Discuss baye's rule and apply the baye's rule for the following.

A bag I contain 4 white and 6 black balls while another Bag II contains 4 white and 3 black balls. One ball is drawn at random from one of the bags, and it is found to be black. Find the probability that it was drawn from Bag I.

6. Apply the baye's rule for the following.

A man is known to speak truth 2 out of 3 times. He throws a die and reports that the number obtained is a four. Find the probability that the number obtained is actually a four.

- 7. Discuss: A) Basic probability notation
 - B) Prior probability
 - C) Posterior probability
 - D) Joint probability distribution
- 8. Explain Bayesian Belief Networks with example?

Unit ----4

1. Define and explain

(i) Supervised learning (ii) Unsupervised learning (iii) Reinforcement learning

- 2. What is a decision tree? Explain the decision tree learning algorithm with an example?
- 3. Define the following a) Inductive learning.

b) Learning Decision Tree.

- 4. What is rote learning? Explain in detail with an example?
- 5. What is learning by taking advice? Explain in detail with an example?
- 6. What is learning from examples and its types?

ARTIFICIAL INTELLIGENCE

- 1. What is Expert system? Explain its Phases or components?
- 2. Differentiate between Expert Systems Vs Traditional Systems?
- 3. Explain Architecture of expert systems.
- 4. List the application of Expert systems.
- 5. Discuss knowledge Acquisition?
- 6. Discuss where expert system can be applied? Write advantages and limitation of expert system