G. Narayanamma Institute of Technology & Science
(**Autonomous**)   (*for Women*)

Shaikpet, Hyderabad- 500 104

III-B.Tech I-Semester *Regular Examinations, February -2022.*

ARTIFICIAL INTELLIGENCE
(*Information Technology*)

Max. Marks: 70   **Time: 03 Hours**

*(Answer any **05** full questions. Each question carries **14 marks**)*
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Q.No.	Question	Marks	Bloom's Level
Q.1(a)	What are the basic components of AI problem solving methodology? Describe them in detail. Illustrate with an example.	[07]	[L3]
(b)	What are the various heuristic techniques? Explain how they are different from the solution guaranteed uninformed techniques.	[07]	[L4]
Q.2(a)	Explain A* searching technique in detail with example. Discuss conditions for the optimality of this technique.	[07]	[L3]
(b)	Write the algorithm for breadth first and depth first search.	[07]	[L2]
Q.3(a)	What is the Mini Max search for game playing? Explain Mini Max search algorithm with an example.	[07]	[L3]
(b)	What is a alpha beta cut off? Explain it using suitable example.	[07]	[L3]
Q.4(a)	Differentiate between forward and backward chaining of inference?	[04]	[L4]
(b)	i) John likes all kind of food. ii) Apples are food. iii) Chicken is food. iv) Anything anyone eats and is not killed by is food. v) Bill eats peanuts and is still alive. vi) Sue eats everything Bill eats. Translate the above sentences into formulas in predicate logic and Prove that "**john like peanuts**" using backward chaining.	[10]	[L3]
Q.5(a)	Discus the various ways or approaches for Knowledge Representation.	[07]	[L3]
(b)	What is an expert system? What are the main advantages in keeping the knowledge base separate from the control module in knowledge-based systems.	[07]	[L3]
Q.6(a)	Discuss various phases in expert system development and its applications.	[09]	[L4]
(b)	Discuss the pros and cons of Expert Systems and Traditional Systems.	[05]	[L3]

Q.7(a)   What is unsupervised learning? Discuss at least one unsupervised learning techniques.   **[05]**   **[L3]**

(b)   Discuss in detail about constructing decision tree induction to a wide variety of platforms with an example.   **[09]**   **[L4]**

Q.8(a)   Explain in detail about perceptron and single-layer feed forward networks along with their applications.   **[10]**   **[L5]**

(b)   Explain step by step process for modeling Multi-Layer Feed Forward networks.   **[04]**   **[L5]**

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END OF THE QUESTION PAPER

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