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

Shaikpet, Hyderabad- 500 104

IV-B.Tech I-Semester *Regular/Supplementary Examinations, Nov -2024*

ARTIFICIAL INTELLIGENCE
(Electronics and Communication Engineering)

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

Note:
1. Question paper comprises of **Part A** and **Part B**.
2. **Part A** is compulsory which carries 10 marks. Answer all questions in Part A.
3. **Part B** (for 60 marks) consists of **five questions** with **"either" "or"** pattern. Each question carries 12 marks and may have a,b,c as sub questions. The student has to answer any one full question.

PART-A
(Answer 05 questions. Each question carries 2 marks)

Q.No	Question	Marks	CO	BTL
Q.1	a) What is a Rational Agent?	[02]	CO1	[L1]
	b) What are the issues in Hill climbing?	[02]	CO2	[L4]
	c) What are the components of Expert System?	[02]	CO3	[L2]
	d) Define Bayes theorem.	[02]	CO4	[L1]
	e) What is an Activation function? Write about sigmoid function.	[02]	CO5	[L2]

PART-B
(Answer 05 full questions. Each question carries 12 marks)

Q.No	Question	Marks	CO	BTL
Q.2(a)	Explain about learning agent with a neat diagram.	[06]	CO1	[L2]
(b)	Differentiate between Breadth first search and Depth First Search with an example.	[06]	CO2	[L4]

OR

Q.No	Question	Marks	CO	BTL
Q.3(a)	Differentiate between Uninformed search and Informed search	[04]	CO2	[L4]
(b)	Discuss A* algorithm with an example.	[08]	CO2	[L3]

Q.No	Question	Marks	CO	BTL
Q.4(a)	Solve given crypt arithmetic problem and find the value of **F+O+R+T**	[06]	CO2	[L3]

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(b)	Consider the following Knowledge Base	[06]	CO4	[L3]

    i) The humidity is high or the sky is cloudy.
    ii) If the sky is cloudy, then it will rain.
    iii) If the humidity is high, then it is hot.
    iv) It is not hot.

Use Resolution and Show that It will rain.

OR

Q.No	Question	Marks	CO	BTL
Q.5(a)	Discuss Semantic Tableau method with an example.	[06]	CO4	[L3]
(b)	List the steps to convert statements to conjunctive normal form(CNF).	[06]	CO4	[L2]

Q.6(a)	Discuss about Knowledge Representation using Semantic network with a suitable example.	[06]	CO3	[L2]
(b)	What is an expert system? Discuss its architecture with a neat diagram.	[06]	CO3	[L1]

OR

Q.7(a)	Compare traditional systems and Expert System with suitable examples.	[06]	CO3	[L4]
(b)	Explain in detail about Knowledge Representation.	[06]	CO3	[L1]

Q.8(a)	What is Bayesian belief network? Discuss with an example.	[06]	CO4	[L3]
(b)	Explain Support Vector machines with suitable examples.	[06]	CO5	[L1]

OR

Q.9(a)	Discuss about Reinforcement learning with suitable examples.	[06]	CO5	[L2]
(b)	Write about Dempster –Shafer Theory.	[06]	CO5	[L2]

Q.10(a)	Explain about Multi-Layer Feed Forward Network with a neat diagram.	[06]	CO5	[L2]
(b)	What is XOR problem? How is XOR problem solved.	[06]	CO5	[L4]

OR

Q.11(a)	Explain different types of parsers in NLP.	[06]	CO6	[L1]
(b)	Discuss Semantic Web in detail.	[06]	CO6	[L2]

END OF PART B
END OF THE QUESTION PAPER