GNITS-R- 18 – 115BR

G. Narayanamma Institute of Technology & Science

(**Autonomous**) ***(for Women)***

Shaikpet, Hyderabad- 500 104

III-B.Tech I-Semester *Regular/Supplementary Examinations, December*- 2023

ARTIFICIAL INTELLIGENCE

(*Information Technology*)

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**)*

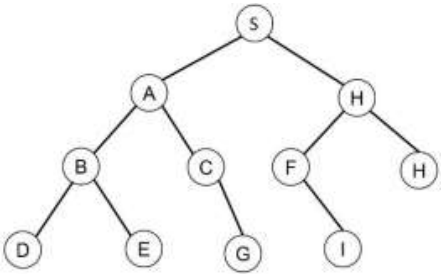
Q.No.	Question	Marks	CO	B L
Q.1	a) List out sub areas of Artificial Intelligence.	[02]	CO1	[L1]
	b) Prove the following statement in propositional logic $\mathbf{A} \Rightarrow \mathbf{B}$ is logically equivalent with $\neg \mathbf{A} \vee \mathbf{B}$	[02]	CO2	[L5]
	c) Compare expert Systems Vs. traditional Systems.	[02]	CO3	[L4]
	d) What is Reinforcement Learning?	[02]	CO5	[L1]
	e) How recurrent network works?	[02]	CO5	[L4]

END OF PART A

PART-B

*(Answer **05** full questions. Each question carries **12 marks**)*

Q.No.	Question	Marks	CO	B L
Q.2(a)	Explain about the applications of Artificial intelligence.	[06]	CO1	[L2]
(b)	Illustrate self-driving car with PEAS representation.	[06]	CO1	[L3]
	OR			
Q.3(a)	Solve the problem given below where S is the initial state and G is the goal state with each edge having equal weightage using BFS and find time complexity.	[06]	CO2	[L6]



(b)	Discuss about Hill Climbing with the help of suitable example.	[06]	CO2	[L2]

Q.4(a)	Let us consider the following p = It is raining q = Mary is sick t = Bob stayed up late last night r = Paris is the capital of France s = John is a loud-mouth Express the following statements in propositional logic i. It is raining and Mary is sick ii. Bob stayed up late last night and John is a loud-mouth iii. Paris isn't the capital of France and It isn't raining iv. John is a loud-mouth but Mary isn't sick v. It is not the case that it is raining and Mary is sick	**[06]**	**CO4**	**[L5]**
(b)	Write about Semantic Tableau System in Propositional logic.	**[06]**	**CO4**	**[L2]**

OR

Q.5	How the following techniques help in understanding in two player game? Explain i) Mini-Max Algorithm ii) Alpha-Beta Pruning	**[12]**	**CO2**	**[L4]**

Q.6(a)	Draw a neat sketch of Expert System Architecture.	**[06]**	**CO3**	**[L2]**
(b)	Discuss about the Phases in Building Expert Systems.	**[06]**	**CO3**	**[L2]**

OR

Q.7(a)	Explain in detail knowledge Representation using Semantic Networks.	**[06]**	**CO4**	**[L2]**
(b)	Summarize Extended Semantic Networks.	**[06]**	**CO4**	**[L2]**

Q.8(a)	Discuss about Bayesian Belief Networks to measure uncertainty.	**[06]**	**CO4**	**[L2]**
(b)	Explain with examples the concept of 'Decision Trees'. Also briefly describe clustering process.	**[06]**	**CO5**	**[L3]**

OR

Q.9(a)	What is Machine Learning? Discuss different types of machine learning approaches.	**[06]**	**CO5**	**[L2]**
(b)	Differentiate between the various learning methods.	**[06]**	**CO5**	**[L4]**

Q.10(a)	Discuss about Multi-Layer Feed-Forward Networks.	**[06]**	**CO5**	**[L2]**
(b)	Explain design Issues of Artificial Neural Networks.	**[06]**	**CO5**	**[L2]**

OR

Q.11(a)	Outline the concept of Semantic Web.	**[06]**	**CO6**	**[L2]**
(b)	List out types of Parsers and explain.	**[06]**	**CO6**	**[L2]**

END OF PART B

END OF THE QUESTION PAPER