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, Jan/Feb* - 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	Bloom's Level
Q.1	a) Explain the applications of Artificial intelligence.	[02]	CO1	[L3]
	b) Give examples of game trees.	[02]	CO2	[L3]
	c) Tabulate two differences between database and knowledge base.	[02]	CO4	[L4]
	d) Explain the objectives of NLP.	[02]	CO6	[L2]
	e) Explain recurrent networks.	[02]	CO6	[L2]

END OF PART A

PART-B

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

Q.No.	Question	Marks	CO	Bloom's Level
Q.2(a)	Explain the advantage of Hill Climbing with a suitable example.	[06]	CO2	[L3]
(b)	Explain the process to reach goal state in DFS.	[06]	CO2	[L4]
	OR			
Q.3(a)	Is a problem-solving search program was to be written to solve the water jug problem, determine whether the search the search should proceed forward or backward.	[04]	CO2	[L4]
(b)	Define Agent. Explain various types of Agents.	[08]	CO3	[L2]

Q.4(a)	Give the basic principle of resolution. Explain resolution in predicate logic with an example.	[06]	CO4	[L3]
(b)	Write short notes on forward reasoning and backward reasoning.	[06]	CO4	[L3]
	OR			
Q.5(a)	Explain Constraint Satisfaction Problems. Discuss Cryptarithmetic problem with an example.	[06]	CO2	[L3]
(b)	Discuss about MINMAX algorithm with an example.	[06]	CO2	[L2]

Q.6(a)	Represent the following sentences into semantic network. *Puss is a calico.* *Herb is tuna.* *Charlie is a tune.* *All tunas are fishes.* *All calicos are cats.* *All cats like to eat all kinds of fishes.*	**[04]**	**CO4**	**[L3]**
(b)	Explain in detail about approaches to knowledge representation.	**[08]**	**CO4**	**[L2]**
	OR			
Q.7(a)	What is an expert system? What factors must be considered in the determining the suitability of a problem for expert system development?	**[04]**	**CO3**	**[L2]**
(b)	Discuss about the expert system architecture with all its applications.	**[08]**	**CO3**	**[L2]**

Q.8(a)	Explain various sources of uncertainty. How we can overcome uncertainty.	**[04]**	**CO4**	**[L4]**
(b)	Explain Bayesian Belief Networks with suitable example.	**[08]**	**CO4**	**[L3]**
	OR			
Q.9(a)	What is learning? Give its importance in Artificial Intelligence problems. Also state the differences between supervised and unsupervised learning.	**[06]**	**CO5**	**[L4]**
(b)	Write Bayes theorem and Explain the significance of probability in Artificial Intelligence.	**[06]**	**CO4**	**[L4]**

Q.10(a)	Explain the various design issues of Artificial Neural Networks.	**[05]**	**CO6**	**[L2]**
(b)	Write a short notes on Multi layer Feed Forward Networks.	**[07]**	**CO6**	**[L2]**
	OR			
Q.11(a)	Explain the types of parsers used in Natural Language Processing.	**[06]**	**CO6**	**[L2]**
(b)	What are the sentence analysis phases used in natural language processing.	**[06]**	**CO6**	**[L2]**

END OF PART B

END OF THE QUESTION PAPER