B.E./B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022
Sixth Semester
Computer Science and Engineering
CS8691 – ARTIFICIAL INTELLIGENCE
(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART-A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Define Artificial Intelligence in terms of rational acting.	2,K1,CO1
2.	List the steps involved in simple problem solving technique.	2,K1,CO1
3.	Define a graph and a path.	2,K2,CO2
4.	Will Breadth-First Search always finds the minimal solution. Why?	2,K2,CO2
5.	Distinguish between predicate and propositional logic.	2,K2,CO3
6.	Represent the following sentence in predicate form "All the children like sweets".	2,K3,CO3
7.	What is a multi-agent system?	2,K2,CO4
8.	Define an agent program.	2,K1,CO4
9.	What are the objectives of NLP?	2,K2,CO5
10.	Define Planning in Artificial Intelligence.	2,K2,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	For each of the following agents, develop a PEAS description of the task environment: a. Robot soccer player; b. Internet book-shopping agent; c. Autonomous Mars rover; d. Mathematician's theorem-proving assistant	13,K2,CO1

OR

	b)	Explain in detail, the structure of different intelligent agents.	13,K2,CO1

12.	a)	Explain in detail about Uninformed Search Strategies with examples.	13,K3,CO2

OR

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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b) (i) Explain the nature of heuristics with an example. What is the effect of heuristic accuracy on performance?   *7,K2,CO2*

(ii) Write a simple back tracking algorithm for constraint satisfaction problems.   *6,K3,CO2*

13. a) Explain Stochastic Games with examples.   *13,K2,CO3*

<div align="center">OR</div>

b) Summarize about the following with examples   *13,K3,CO3*
   (i) Alpha Pruning
   (ii) Beta Pruning

14. a) Problem on Resolution using predicate logic   *13,K2,CO4*
   (i) All people who are graduating are happy.
   (ii) All happy people smile.
   (iii) Someone is graduating.
   Conclusion: Is someone smiling?

<div align="center">OR</div>

b) Explain in detail about the Forward and Backward Chaining with examples.   *13,K2,CO4*

15. a) Briefly explain   *13,K2,CO5*
   (i) Communication Levels
   (ii) Speech Acts
   (iii) Knowledge Query and Manipulation Language (KQML)
   (iv) Knowledge Interchange Format (KIF)

<div align="center">OR</div>

b) (i) How Bargaining takes place in Intelligent Agents .Justify.   *7,K2,CO5*
   (ii) Discuss the trust in Multi Agent Systems.   *6,K2,CO5*

<div align="center">PART - C (1 × 15 = 15 Marks)</div>

16. a) Design a robotic action with the appropriate hardware needed and give the explanation.   *15,K3,CO6*

<div align="center">OR</div>

b) Explain the natural language is processing with a relevant example.   *15,K3,CO6*