KUMARAGURU college of technology
character is life

Register Number:……..…

MCA DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2020)

Third Semester

MASTER OF COMPUTER APPLICATIONS

P20CAT3004: Artificial Intelligence

COURSE OUTCOMES

CO1: Know the basics and problem-solving approach to AI problems.

CO2: Analyze various search strategies for a problem.

CO3: Evaluate different knowledge representation schemes for typical AI problems.

CO4: Design and implement a typical AI problem to be solved Using Machine Learning Techniques.

CO5: Design and implement a futuristic AI application.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1.	Define Artificial Intelligence.	CO1	[K_1]
2.	List out the characteristics of intelligent agents.	CO1	[K_1]
3.	What is meant by Turing test in Artificial Intelligence?	CO1	[K_1]
4.	Define Heuristic function h(n).	CO2	[K_2]
5.	Compare propositional and first order logic.	CO3	[K_3]
6.	What is the need for probability theory in Artificial Intelligence?	CO3	[K_4]
7.	Distinguish between Regression and Classification.	CO4	[K_3]
8.	What are the different types of Planning?	CO4	[K_2]
9.	Write a short note on Artificial Neural Network in machine learning.	CO4	[K_2]
10.	Differentiate Supervised and Unsupervised learning.	CO4	[K_4]

PART B (6 x 5 = 30 Marks)

11.	Elucidate on any four application areas of Artificial Intelligence.	CO1	[K_3]
12.	Differentiate informed and uninformed search techniques with an example algorithm for each.	CO2	[K_4]

13.	What is a constraint satisfaction problem? Trace the constraint satisfaction procedure by solving the following crypt arithmetic problem: SEND+MORE=MONEY	CO2	[K_3]
14.	Compare forward and backward chaining algorithms with suitable examples.	CO3	[K_5]
15.	Define the following in First Order Predicate Logic: (i) Quantifiers (ii) Ground Term (iii) Atomic sentence	CO3	[K_2]
16.	What do you mean by reinforcement learning? Discuss how it is different from other learning techniques.	CO4	[K_4]

Answer any FIVE Questions

PART C (5 x 10 = 50 Marks)

17.	Illustrate the functions and components of goal-based agents and utility-based agents.	CO1	[K_2]
18.	"Pruning based on Alpha-Beta improves the efficiency of Min Max algorithm"- Justify.	CO2	[K_4]
19.	Trace the steps in A* algorithm and highlight its merits and demerits.	CO2	[K_3]
20.	Elaborate the Unification algorithm in First Order Logic with suitable example.	CO3	[K_3]
21.	Analyze the applications of Bayesian Networks and Hidden Markov Models in solving real world problems.	CO5	[K_4]
22.	Appraise the advantages of Support Vector Machine (SVM) over any two classification algorithms. Highlight limitations of SVM.	CO4	[K_5]

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