U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Information Science and Engineering **Duration: 3 hrs.**
Course Code: 20IS5PEAIS **Max Marks: 100**
Course: Artificial Intelligence **Date: 03.03.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - I

1	a)	What is AI? Illustrate in detail the four approaches or views of AI.	**10**
	b)	Demonstrate with an example, the working of Depth first search.	**10**

UNIT - II

2	a)	Write Problem Reduction Algorithm with AO*. Illustrate the working of AO* problem reduction algorithm with an example.	**10**
	b)	Demonstrate the steps of Generate and Test search strategy with an example.	**10**

OR

3	a)	Write the algorithm for mean-ends analysis. Considering a simple household-robot, show the progress of this method to reach the goal.	**10**
	b)	List and examine the limitations of steepest-ascent strategy of hill climbing & discuss the possible ways to deal with it.	**10**

UNIT - III

4	a)	Differentiate along with an example, Procedural versus Declarative representation of knowledge.	**10**
	b)	Explain the syntax & semantics of propositional logic.	**05**
	c)	Describe Assertions & Queries for first order logic.	**05**

UNIT - IV

5	a)	"Where do probability come from?" Validate the statement summarizing the different probabilistic views.	**10**
	b)	Briefly outline the two ways in which one can understand the semantics of Bayesian network.	**10**

OR

6	a)	Describe probability axioms and their reasonableness.	**10**
	b)	State & explain Bayes' rule. Illustrate the working of Bayes' rule with an example.	**10**

UNIT - V

7	a)	Define expert system. Explain characteristics features of an expert system. Mention any five applications of expert system.	**10**
	b)	Illustrate the working of MYCIN expert system.	**06**
	c)	Justify the need for an expert system.	**04**

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