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

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E. **Semester: VII**
Branch: Industrial Engineering & Management **Duration: 3 hrs.**
Course Code: 17IM7DEAIE **Max Marks: 100**
Course: Artificial Intelligence and Expert Systems **Date: 15.09.2023**

Instructions: 1. Choose one question from each unit and answer
2. All questions carry equal Marks

UNIT - I

1	a)	Explain the warnings expressed by industry and academic experts on the reckless use of AI in today's world. On what should the guard be while using AI technology?	**10**
	b)	Select a task of your choice and explain the concepts of State, Space and Search with reference to that task domain when AI system takes over that task.	**10**

OR

2	a)	Analyze the importance of the idea of Production System in AI? Explain its components and types with an example for each.	**10**
	b)	Define the concept of Heuristics? How do you apply it in a chess game example?	**10**

UNIT - II

3	a)	How is the Knowledge domain used for Knowledge Representation classified? Explain each type with a real-world example.	**08**
	b)	Explain Forward and Backward Reasoning mechanisms with an illustration.	**04**
	c)	Enlist the steps to convert WFFs into CNF and the reasons for making such conversion.	**08**

OR

4	a)	Translate the following English sentences to wffs and convert them to Clausal Form:	**15**

- All affine spaces are perceptually equivalent.
- All Euclidean spaces are affine.
- Not all affine spaces are Euclidean.
- The space we live in is Euclidean.
- Not all transformations produce affine spaces.

b) Explain the Resolution rule adopted in AI. **05**

UNIT – III

5 a) Explain the utility of Bayesian Belief Network with an example by creating a network that defines the Causal connections among the nodes and the application of idea of conditional probabilities in them. **10**

b) How do you apply Fuzzy Logic to explain the heights of individuals? Construct Fuzzy Sets and the membership functions pertaining to the following list of propositions: **10**

- John is very tall
- Mary is slightly tall
- Sue and Linda are close friends
- John is young/ John is very young
- Most Frenchmen are not very tall

UNIT - IV

6 a) Explain 'Pattern Recognition' with a real-world application. **10**

b) Explain the use of Expert System Shells in building ES with an example. **10**

UNIT - V

7 a) Explain the design and working of MYCIN. **10**

b) Explain the different types of Learning. Give examples for each. **10**

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