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**PRESIDENCY
UNIVERSITY**

BENGALURU

School of Information Science

Mid - Term Examinations - November 2024

Semester: III

Date: 07-11-2024

Course Code: CSA2020

Time: 09.30am to 11.00am

Course Name: Artificial Intelligence

Max Marks: 50

Program: BCA

Weightage: 25%

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Qx2M=10M

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|---|---|---------|----|-----|
| 1 | What is AI and list out the 3 categories of Agent with its sensors? | 2 Marks | L1 | C01 |
| 2 | What is sensor? Name any 4 sensors to the agriculture domain? | 2 Marks | L1 | C01 |
| 3 | What is Logic? And write any 4 mathematical notations/symbols of elements of logic. | 2 Marks | L1 | C02 |
| 4 | What is Reasoning? Name any 2 type reason in logics? | 2 Marks | L1 | C02 |
| 5 | Name any 4 types of knowledge with an real world example. | 2 Marks | L1 | C02 |

Part B

Answer ALL Questions. Each question carries 10 marks.

4QX10M=40M

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|---|-----|--|---------|----|-----|
| 6 | 6a. | List the all five types of reflex agents with an example?. | 2 Marks | L1 | C01 |
| | 6b. | Explain the Model-based reflex agent with a float chart. | 5 Marks | L3 | C01 |
| | 6c. | What is goal based reflex agent. | 3 Marks | L3 | C01 |

Or

7	7a.	List any four AI applications with its sensors and actuators.	2 Marks	L1	C01
	7b.	Define various sensors and actuators are required for a vending machine application and name the suitable reflex agent?	3 Marks	L2	C01
	7c.	Illustrate the role of AI in the marketing with real-world examples.	5 Marks	L3	C01
8	8a.	Who is invented difference engine in 1820? Explain the significance of difference engine.	2 Marks	L1	C01
	8b.	Illustrate the role of AI in the automatic car parking systems with real-world examples.	5 Marks	L3	C01
	8c.	Provide an example on goal based agent with a scenario.	3 Marks	L2	C01
Or					
9	9a.	What is the definition of knowledge representation, and why is it important in artificial intelligence?	2 Marks	L1	C01
	9b.	Describe the learning based reflex agent?	5 Marks	L3	C01
	9c.	Explain the interaction between intelligent agents and their environment in specific applications	3 Marks	L2	C01
10	10a.	Define reasoning in logical framework that enhances the capabilities of knowledge-based systems?	2 Marks	L1	C02
	10b.	Discuss the importance of Knowledge representations in AI with logical framework?	3 Marks	L2	C02
	10c.	Draw a neat diagram of architecture of knowledge representation and explain the each components?	5 Marks	L3	C02
Or					
11	11a.	Provide an example to the all elements of first order logic.	5 Marks	L3	C02
	11b.	How would you design a framework that integrates first-order logic into knowledge-based systems for improved reasoning?.	3 Marks	L2	C02
	11c.	Give an example to the all 4 types of reasoning in logic?	2 Marks	L1	C02

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|-----------|---|---------|----|-----|
| 12 | 12a. Compare the first order logic and zero order logic with an example. | 3 Marks | L1 | C02 |
| | 12b. How would you critique the current knowledge representation methods, and what improvements would you propose? | 2 Marks | L2 | C02 |
| | 12c. Explain why reasoning plays a crucial role in logic | 5 Marks | L3 | C02 |

Or

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|-----------|---|---------|----|-----|
| 13 | 13a. Describe abductive reasoning with an example to illustrate its application in concluding first-order logical inference. | 5 Marks | L3 | C02 |
| | 13b. How would you construct an innovative frame structure to represent a new type of knowledge? | 2 Marks | L2 | C02 |
| | 13c. Write any four types of knowledge that are existed in the environment? | 3 Marks | L1 | C02 |