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RAN-2111040102010002**MCA (Sem. II) Examination May - 2023****Artificial Intelligence : Paper 201****Time: 3 Hours]****[Total Marks: 70****સૂચના : / Instructions**

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નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

☛ MCA (Sem. II)

Name of the Subject :

☛ Artificial Intelligence : Paper 201

Subject Code No.: 2111040102010002

Seat No.:

Student's Signature

Q.1**(14)**

- A. Define the term 'Artificial Intelligence. Also, explain how the AI problem domain is different from conventional commercial applications. 7
- B. Write rules for solving the water jug problem. 5

OR

- B. What is the importance of symbolic knowledge in AI? 5
- C. List at least four sources of knowledge acquisition. 2

Q.2**(14)**

- A. What is the importance of the structural knowledge representation method? Explain the associative network using an appropriate example. 7
- B. Define contradictory and equivalent statements. Also, find whether the following statement is true or false if P and Q are true and R is false.
 $((\sim P \& Q) \rightarrow R) \wedge Q$ 5

OR

- B. What is a Heuristic? Explain the Minmax search. 5
- C. Explain the advantages and disadvantages of Blind search. 2

- Q.3** (14)
- A. Explain Bayes rule in detail. How is it used in AI? 7
 - B. Explain any four semantic rules. 5
- OR**
- B. Define probability and uncertainty. What are the causes of uncertainty? 5
 - C. What is a confusion matrix? 2
- Q.4** (14)
- A. What is knowledge acquisition? Explain memorization and deductive learning methods. 7
 - B. Explain the supervised learning method. 5
- OR**
- B. Explain efficiency and robustness to measure the performance of a learning method. 5
 - C. What is reinforcement learning? 2
- Q.5** (14)
- A. Define the expert system and also discuss its characteristics. 7
 - B. Discuss an example of an expert system in the field of game playing. 5
- OR**
- B. Write a note on Sources of errors in the expert system. 5
 - C. List application of AI in NLP. 2
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