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17CS562

**Fifth Semester B.E. Degree Examination, July/August 2022**  
**Artificial Intelligence**

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

**Module-1**

- 1 a. Define Artificial Intelligence. List the task domains of Artificial Intelligence. (10 Marks)  
b. Explain the components and categories of production system. List the requirements of good control strategies. (10 Marks)

**OR**

- 2 a. Solve the following cryptarithmic problem: SEND + MORE = MONEY (10 Marks)  
b. List and explain the problem characteristics which must be analysed before deciding on a proper-Heuristic search. (10 Marks)

**Module-2**

- 3 a. Write the algorithm for conversion to clause form. (10 Marks)  
b. What are the properties of good representation of knowledge? Explain different approaches of knowledge representation. (10 Marks)

**OR**

- 4 a. Define Horn Clause. Explain with examples syntactic difference between PROLOG and Logic. (10 Marks)  
b. Distinguish between forward and backward reasoning. Explain with an example. (10 Marks)

**Module-3**

- 5 a. What are the key issues which needs to be addressed by non monotonic reasoning system? Explain. (10 Marks)  
b. Explain justification based Truth Maintenance System (TMS) with an example. (10 Marks)

**OR**

- 6 a. Write a note on closed world assumption. (10 Marks)  
b. Explain Bayesian network. (10 Marks)

**Module-4**

- 7 a. Explain conceptual dependency along with its goals and representation. (10 Marks)  
b. Write a note on global ontology. (10 Marks)

**OR**

- 8 a. Write the algorithm for minimax(position, depth, players) and explain. (10 Marks)  
b. Explain CYC and its motivations. (10 Marks)

**Module-5**

- 9 a. Explain knowledge acquisition. (10 Marks)  
b. Explain the process of the learning from examples. (10 Marks)

**OR**

- 10 a. Explain the five phases of natural language processing. (10 Marks)  
b. What are the capabilities expected from expert systems? (10 Marks)

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