PA-1610

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T.E. (Artificial Intelligence and Data Science)
ARTIFICIAL INTELLIGENCE
(2019 Pattern) (Semester - I) (310253)

Time : 2½ Hours]　　　　　　　　　　　　　　　　*[Max. Marks : 70*

Instructions to the candidates:

1) Answer four questions Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8.

2) Figures to the right side indicate full Marks.

3) Assume suitable data, if necessary.

4) Neat diagrams must be drawn wherever necessary.

Q1) a) What are the issues that need to be addressed for solving CSP efficiently? Explain the Solutions to them. **[9]**

b) Explain heuristic function that can be used in cutting off search in detail. **[9]**

OR

Q2) a) Explain Alpha-Beta Tree search and cutoff procedure in detail with an example. **[9]**

b) Define constraints in CSPs. Explain any two types of Constraints in detail. **[5]**

c) What are the limitations of Game search algorithms? **[4]**

Q3) a) What are the various approaches to knowledge representation? Explain in detail. **[9]**

b) Detail the algorithm for deciding entailment in proposition logic. **[8]**

OR

Q4) a) Differentiate propositional logic with First order logic. List the Inference rules along with suitable examples for first order logic. **[8]**

b) Explain Knowledge representation structures and compare them. **[9]**

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Q5) a) Explain Unification algorithm with suitable example. **[9]**

b) What is knowledge engineering? Explain ontology of situation calculus. **[9]**

OR

Q6) a) Explain the forward chaining process and efficient forward chaining with example. State its usage. **[8]**

b) What are the reasoning patterns in Propositional logic? Explain them in detail. **[7]**

c) Write a note on: categories and objects. **[3]**

Q7) a) Explain time, schedules and resources in temporal domain with an example. **[9]**

b) Discuss AI and its ethical concerns. Explain Limitations of AI. **[8]**

OR

Q8) a) Analyze various planning approaches in detail. **[9]**

b) Explain AI Architecture with a suitable diagram. **[8]**

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