

Total No. of Questions : 8]

SEAT No. :

P814

[5870] - 1135

[Total No. of Pages : 2

**T.E. (Computer Engineering)
ARTIFICIAL INTELLIGENCE
(2019 Pattern) (Semester - II) (310253)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q 1 or Q 2, Q 3 or Q 4, Q 5 or Q 6, Q 7 or Q 8.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Assume suitable data if necessary.

Q1) a) Explain Alpha - Beta Tree search and cutoff procedure in detail with example. [9]

b) What are the issues that need to be addressed for solving esp efficiently? Explain the solutions to them. [9]

OR

Q2) a) Explain in detail the concepts of back tracking and constraint propagation and solve the N-queen problem using these algorithms. [9]

b) Write a short note on Monte Carlo Tree search and list its limitations. [5]

c) Apply constraint satisfaction method to solve following Problem

SEND + MORE = MONEY. (TWO + TWO = FOUR, CROSS+ ROADS= DANGER) [4]

Q3) a) List the inference rules used in propositional logic? Explain them in detail with suitable example. [9]

b) Explain syntax and semantics of First Order Logic in detail. [8]

OR

Q4) a) Detail the algorithm for deciding entailment in propositional logic. [8]

b) Explain knowledge representation structure and compare them. [9]

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Q5) a) Explain Forward and Backward chaining. What factors justify whether reasoning is to be done in forward or backward chaining. [9]

b) What are the reasoning patterns in propositional logic? Explain them in detail. [9]

OR

Q6) a) Explain unification algorithm with an example. [8]

b) Explain knowledge representation structures and compare them. [7]

c) What do you mean by Ontology of situation calculus? [3]

Q7) a) Analyse various planning approaches in detail. [9]

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

OR

Q8) a) Explain the terms for time and schedule from perspective of temporal planning. [9]

b) Write a detailed note on AI Architecture. [8]

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