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Unit - I

2. What is heuristic function? Discuss how heuristic function helps during search procedure? On the basis of heuristic function, how best first and A* algorithms are different from each other. Explain with example.
3. What is prototype? Discuss the purpose of prototyping. How a prototype is constructed in expert system? List out the steps of prototype construction in detail.

Unit - II

4. (a) What is knowledge engineering ? Explain the activities and views related to knowledge engineering? Also discuss the role of knowledge acquisition in KE.
(b) What is conflict resolution? Discuss various strategies for conflict resolution?
5. (a) What is Truth Maintenance System? Compare justification based, assumption based and logic based truth maintenance system with each other.
(b) What is probabilistic reasoning? How probability can be determined with uncertain knowledge? Discuss.

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Unit - III

6. (a) Discuss the working principle and architecture of McCulloch-Pitts neural network with diagrammatic notation and appropriate example.
(b) What is selection in Genetic algorithm? Describe various selection methods used in GA.
7. (a) What is perceptron? Discuss the operational characteristics, elements and training algorithm for single output unit of perceptron.
(b) What is optimization? How optimized result can be achieved on the basis of Ant Colony Optimization Method?

Unit - IV

8. (a) What is fuzzy logic? Explain component architecture of fuzzy logic with diagrammatic representation.
(b) What is fuzzy inference system? Discuss the construction, working and methods of FIS.

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9. (a) Discuss the architecture, components and steps of design of Fuzzy control system.
- (b) What is Information Retrieval? How computational intelligence is used in IR?

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MCA (2 Year) 3rd Semester w.e.f. 2021-2022

Examination, May-2023

ARTIFICIAL INTELLIGENCE AND
COMPUTATIONAL INTELLIGENCE

Paper - 21MCA23C2

Time allowed : 3 hours]

[Maximum marks : 80

Note: Attempt five questions in all. Question no. 1 is compulsory. In addition to compulsory question, attempt four more question selecting one question from each unit.

1. Compulsory Questions :

- (a) How problem can be defined as state space?
- (b) How candidate analysis is done in expert system?
- (c) What is skolemization?
- (d) How reasoning is done with semantic network?
- (e) What is content addressable memory?
- (f) Why GA is used rather than traditional search methods?
- (g) Define hedge with example.
- (h) How learning can be applied in pattern recognition?

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[P.T.O.]