

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022
(Regular/Improvement/Supplementary)

COMPUTER SCIENCE
FCSS2C09-COMPUTATIONAL INTELLIGENCE

Time: 3 Hours**Maximum Weightage: 30****Section A: Short answer questions. Answer any *four* questions. Each carries 2 weightage.**

1. Explain about knowledge acquisition.
2. Differentiate between forward and backward reasoning.
3. Elaborate on state space search using water jug problem.
4. Give a detailed account of means-ends analysis.
5. Write short note on: a) Formal learning theory; b) Analogy.
6. Explain briefly the representation of instances and ISA relationships.
7. What are the operators used in genetic algorithm? Explain its significance.

(4 × 2 = 8 weightage)

Section B: Short essay questions. Answer any *four* questions. Each carries 3 weightage.

8. How problem characteristics help in the selection of AI technique? Explain these characteristics with possible examples.
9. Explain A* algorithm. Explain the effect of overestimation and underestimation of it on A* algorithm.
10. What is conceptual dependency? Give the conceptual dependency representation of “John gave the book to Mary”.
11. Explain connectionist models in detail.
12. Give a detailed account of mini-max search procedure.
13. What are fuzzy sets? Explain how reasoning is done using fuzzy logic.
14. Describe the logics for non-monotonic reasoning.

(4 × 3 = 12 weightage)

Section C: Essay questions. Answer any *two* questions. Each carries 5 weightage.

15. What do you mean by machine learning? Explain its types.
16. Define expert system. Explain its architecture in detail with a neat diagram. Also write about expert system tools.
17. Explain the structures and strategies for state space search with suitable example.
18. What are the approaches and issues in knowledge representation? Explain.

(2 × 5 = 10 weightage)