

Here is a short list of topics suggested to prepare for the final examination (the zero exam); what you need is full understanding of the problems and some operational knowledge:

1. Constraint Programming:

- encoding and understanding basic constructs in MiniZinc;
- interpreting „solve satisfy” and optimization;
- understanding backward search and constraint propagation;
- global constraints (alldifferent);
- symmetry breaking;
- example problems (cryptoarithmetic, map coloring, production planning, knapsack, etc.).

2. State-space search and planning:

- Towers of Hanoi;
- Block World;
- Missionaries and Cannibals;
- modeling state-space and operations;
- representation of states and operators in STRIPS model;
- modeling state change (with Delete Results and Add Results);
- plan generation;

3. Propositional Logic:

- CNF, DNF, Horn-clauses,
- equivalence-preserving transformations;
- inference rules;
- resolution rule;
- SAT – search for models;
- logical implication and basic theorem proving.

4. Prolog:

- basic understanding of logic programs;
- interpretation of simple Prolog programs.

5. Rule-Based Systems:

- understanding the work of rule-based system;
- forward and backward reasoning.

It is required to:

- understand the basic concepts,
- be able to describe a formal model,
- be able to simulate simple reasoning,
- analyze basic properties of systems and solutions,
- have some general ideas of KRR and be able to apply them.