

CSE-304 F

## Intelligent Systems

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Class Work : 50 Marks  
Exam : 100 Marks  
Total : 150 Marks

Duration of Exam : 3 Hrs.

**NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.**

### Section-A

**Foundational issues in intelligent systems:** Foundation and history of AI, AI problems and techniques – AI programming

languages, introduction to LISP and PROLOG- problem spaces and searches, blind search strategies, Breadth first- Depth first- heuristic search techniques Hill climbing: best first- A \* algorithm AO\* algorithm-game tree, Min max algorithms, game playing- alpha beta pruning.

### Section-B

Knowledge representation issues, predicate logic- logic programming, semantic nets- frames and inheritance, constraint propagation, representing knowledge using rules, rules based deduction systems.

Reasoning under uncertainty, review of probability, Baye's probabilistic interferences and Dempster shafer theory, Heuristic methods,

### Section-C

Symbolic reasoning under uncertainty, Statistical reasoning, Fuzzy reasoning, Temporal reasoning, Non monotonic reasoning. Planning, planning in situational calculus, representation for planning, partial order planning algorithm,

### Section-D

Learning from examples, discovery as learning, Learning by analogy, explanation based learning, neural nets, genetic algorithms. Principles of Natural language processing, rule based systems architecture, Expert systems, knowledge acquisition concepts, AI application to robotics, and current trends in intelligent systems.

### Text Book:

- Artificial Intelligence: A Modern Approach, Russell & Norvig. 1995, Prentice Hall.

### Reference Books:

- Artificial Intelligence, Elaine Rich and Kevin Knight, 1991, TMH.
- Artificial Intelligence-A modern approach, Stuart Russel and peter norvig, 1998, PHI.
- Artificial intelligence, Patrick Henry Winston:, 1992, Addition Wesley 3 Ed.,