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Semester-I Paper-4
ARTIFICIAL INTELLIGENCE

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Teaching Scheme	**Examination Scheme**
Lecturers: 4 Hrs / week	Theory: 100 marks
Practical: 2 Hrs / week	Term work: 25 marks

Unit 1.   (10 Hrs, 20 Marks)
Introduction to AI: Intelligent agents, Perception, Natural language processing, Problem, Solving agents,
Searching for solutions: Uniformed search strategies, informed search strategies.

Unit 2.   (10 Hrs, 20 Marks)
Knowledge and reasoning: Adversarial search, Optimal and imperfect decisions, Alpha, Beta pruning.
 Logical agents: Propositional logic, First order logic, Syntax and semantics, Using first order logic, Inference in first order logic.

Unit 3.   (10 Hrs, 20 Marks)
Uncertainty, Acting under uncertainty, Basic probability notation, Axioms of probability, Baye's rule, Probabilistic reasoning, and making simple decisions.

Unit 4.   (10 Hrs, 20 Marks)
Planning: Planning problem, Partial order planning, Planning and acting in non-deterministic domains.
Learning: Learning decision trees, Knowledge in learning, Neural networks, Reinforcement learning, Passive and active.

Unit 5.   (10 Hrs, 20 Marks)
Expert systems: Definition, Features of an expert system, Organization, Characteristics, Prospector, Knowledge Representation in expert systems, Expert system tools, MYCIN, EMYCIN.

References.
1. Artificial Intelligence - A Modern Approach, "Stuart Russel and Peter Norvig", Second Edition, Pearson Education, 2003 / PHI.
2. A Guide to Expert Systems, "Donald A.Waterman", Pearson Education
3. Artificial Intelligence – Structures and Strategies for Complex Problem Solving, "George F.Luger", Fourth Edition, Pearson Education, 2002.
4. Artificial Intelligence, "Elain Rich and Kevin Knight", Second Edition Tata McGraw Hill, 1995.
5. Foundations of Artificial Intelligence and Expert Systems, "Janakiraman, K. Sarukesi", Macmillan Series in Computer Science
6. W. Patterson, 'Introduction to Artificial Intelligence and Expert Systems', Prentice Hall of India, 2003.

List of Experiments:
        Term work shall consist of at least **eight** experiments based on above topics