# Tentative Syllabus: Test-2

## Unit III

**Planning:** Definition, Planning with State-Space Search, Planning Graphs, Other Planning Approaches Analysis. **Uncertainty:** Acting under Uncertainty, Basic Probability Notations, Inference using Full Joint Distributions, Independence, Bayes' Rule and its Use. **Learning from Examples:** Forms of Learning, Supervised Learning, Learning Decision Trees, Artificial Neural Networks, Support Vector Machines, Ensemble Learning. (Chapter 10, Chapter 13, Chapter 18.1,18.2,18.3, 18.7,18.9,18.10 of Text Book 1)

## Unit IV

**Natural Language Processing:** Language Models, Text Classification, Information Retrieval, Information Extraction. **Natural Language communication:** Phrase Structure Grammars, Syntactic Analysis, Augmented Grammars and Semantic Interpretation, Machine translation, Speech recognition. (Chapter 22, 23 of Text Book 1)

## Unit V

**Genetic Algorithms:** Genetic Algorithms Introduction, Significance of Genetic Operators, Termination Parameters, Niching and Speciation, Evolving Neural Networks, Theoretical Grounding, Ant Algorithms. **Robotics:** Introduction, Hardware, Perception, Planning to Move, Planning Uncertain Movement, Moving, Robotic Software Architecture, Application Domains. **Philosophical Foundations:** Weak and Strong AI, The Ethics and Risks of Developing AI, AI: The present and Future. (Chapter 23 of Text Book 2, Chapter 25, 26 ,27 of Text Book 1)