

(Time: 3 hours)

[Total Marks: 75]

Please check that you have got the correct question paper.

- N. B.: (1) All questions are compulsory.
 (2) Make suitable assumptions wherever necessary and state the assumptions made.
 (3) Answers to the same question must be written together.
 (4) Numbers to the right indicate marks.
 (5) Draw neat labeled diagrams wherever necessary.
 (6) Use of Non-programmable calculators is allowed.

SECTION – I

1.
 - a. What are intelligent systems? Explain. 7
 - b. Write a short note on AI. Mention its applications. 6
- OR**
1.
 - a. Explain how utility-based agent is different than goal-based agent? Compare the Characteristics of utility-based and goal-based agent. 7
 - b. Explain the structure of an intelligent system. 6
2.
 - a. What is UNIFICATION? Explain working of unification with examples. 7
 - b. State and explain the A* algorithm in brief. 6
- OR**
2.
 - a. State steps required for converting every sentence of first order logic to equivalent CNF sentence. 7
 - b. Write a note on Dempster-Shafer's belief networks theory. 6
3.
 - a. Describe Quantifiers with their uses. 6
 - b. Write a short note on Thinking Humanly – a cognitive model approach. 6
- OR**
3.
 - a. Write a note on multi-layered feed forward network. 6
 - b. Compare the characteristics between prior probability and conditional probability. 6

SECTION II

4.
 - a. Describe the McCulloch and Pitts models of neuron. 7
 - b. Write a note on "Methods of steepest descend-LMS". 6
- OR**
4.
 - a. Explain the least mean square algorithm. 7
 - b. Explain error correction learning. 6
5.
 - a. Explain the error correction mechanisms. 6
 - b. Explain Fuzzy Logic with one example. 6
- OR**
5.
 - a. What are MLP networks? How are they different from RBF Network? 6
 - b. State and explain Boltzmann learning mechanism. 6
6.
 - a. What is perceptron and mention perceptron convergence theorem. 6
 - b. Write a short note on membership functions in fuzzy logic. 6
- OR**
6.
 - a. Explain any 2 architectures of neural networks. 6
 - b. What are the salient features of Boltzmann learning rule? Explain. 6