

Roll No. ....

**HILTRON**

**M.Sc.(IT)-10 (Master of Information Technology)**

**Fourth Semester, Examination- 2013**

**MIT- 4004**

**Artificial Intelligence**

**Time: 3 Hours**

**Max. Marks: 60**

**Note:- The question paper is being divided in to three sections A, B and C.  
Answer the questions as per the instructions given in each section.**

**Section- A  
(Long Answer's Questions)**

**Note:- Answer any two questions. Each question carries 15 marks. (2X15=30)**

- Q.1.** What is artificial intelligence? Discuss the significance of AI?
- Q.2. a.** Explain the term "Artificial Intelligence" in detail. Moreover specify how it can be used as a programming tool.
- b.** Consider the following group of statements and prove that John is not a child using resolution.
- Every child loves Santa. Everyone who loves Santa loves any reindeer. Rudolph is a reindeer, and Rudolph has a red nose. Anything which has a red nose is weird or is a clown. No reindeer is a clown. John does not love anything which is weird.
- Q.3** What do you understand by expert system? Explain any application of expert system with suitable functionality.
- Q.4.a.** What is semantic network? Explain the concept of multiple inheritances in Semantic Network.
- b.** Explain Simple Hill climbing approach with the help of related example.

**Section-B  
(Short answer's questions)**

**Note:- Answer any four questions. Each question carries 05 marks. (4X5=20)**

- Q.1.** Write a short not on LISP.
- Q.2.** What do you understand by knowledge base? How it is different from database.
- Q.3.** Differentiate between expert system and a traditional system.
- Q.4.** What is Semantic net?

- Q.5.** Explain A\* algorithm with a suitable example.
- Q.6.** Distinguish between informed and uninformed search strategies.
- Q.7.** Explain breadth first search.
- Q.8.** What are the basic principle of knowledge representation?

**Section- C**  
**(True/False)/ Objective Question (Compulsory))**

**Note:- Attempt all questions. Each question carries 01 mark. (10X01=10)**

- Q.1.** Artificial Intelligence is formulated on human brain analogy. **True/False**
- Q.2.** Expert systems are adaptive systems that work independently, carrying out specific, repetitive, or predicable tasks. **True/False**
- Q.3.** A neural network is an artificial intelligence system that is capable of finding and differentiating patterns. **True/False**
- Q.4.** An expert system is an artificial intelligence system that applies reasoning capabilities to reach a conclusion. **True/False**
- Q.5.** Fuzzy logic is a statistical tool. **True/False**
- Q.6.** Which AI system reasons through problems and offer advice in the form of a conclusion or recommendation?
- A. Expert systems                      B. Neural networks
- c. Genetic algorithms                  D. Intelligent agents
- Q.7.** Which AI system can be “trained” to recognize patterns?
- A. Expert systems                      B. Neural networks
- c. Genetic algorithms                  D. Intelligent agents
- Q.8.** Which AI system generates increasingly better solutions to problems by generating many solutions?
- A. Expert systems                      B. Neural networks
- c. Genetic algorithms                  D. Intelligent agents
- Q.9.** Which AI system is an adaptive system that works independently, carrying out specific, repetitive, or predictable tasks?
- A. Expert systems                      B. Neural networks

c. Genetic algorithms

D. Intelligent agents

**Q.10.** What is another name for an expert system?

A. Neural network

B. Knowledge-based system

C. Intelligent agent

C. None of the above.