Exam.Code: 0917 Sub. Code: 6788

1128

B.E. (Computer Science and Engineering) Fifth Semester CS-503: Artificial Intelligence

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What is artificial intelligence? Discuss three problems which have been solved by artificial intelligence.
- b) What is the reason that fuzzy logic has rapidly become one of the most successful technology for developing sophisticated control systems?
- c) State the necessity of Defuzzification.
- d) How much knowledge would be required by a perfect program for playing chess? Assuming unlimited computing power is available.
- e) List three activities supported by programs that interact with domain experts to extract expert knowledge. (5x2)

UNIT-I

- II. a) Consider a water jug problem. You are given 2 jugs; a 4-gallon and 3-gallon jugs. Neither has 5 any measuring mark in it. There is a pump that can be used to fill the jugs with water. How can you get exactly 2-gallon of water into a 4-gallon jug? State the production rules for the water jug problem.
 - b) Will breadth first search always find minimal solution? Justify your answer. (5,5)
- III. a) Define term heuristic. List and describe various problem characteristics that need to be considered for selecting appropriate heuristics for a given class of problems.
 - b) Define semantic network. Discuss inference in semantic network. Draw semantic network for the following: "Andrew believes that the earth is flat". (5,5)
- IV. a) Consider the crypt-arithmetic problem shown below. The goal is a problem state where all letters have been assigned a digit in such a way that all the initial constraints are satisfied.

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