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.
           SEND + MORE= MONEY

P.T.O.