

Philadelphia University



Student Name:

Faculty of Engineering

Student Number:

Dept. of Mechatronics Engineering

First Exam, First Semester: 2011/2012

Course Title: Machine Intelligence	Date: 22/11/2011
Course No: (640473)	Time Allowed: 1 Hour
Lecturer: Dr. Mohammed Mahdi	No. of Pages: 1

Question 1:

(7 Marks)

Objectives: This question is about the basic concepts of expert system.

A) Define the following expert system terms briefly:-

Knowledge, Rule-base, Directive rule

B) What is the main parameter that judges the distribution of the triangular fuzzy set? Explain with simple example on a single fuzzy set.

Question 2:

(6 Marks)

Objectives: This question is about expert system development team.

Define the function of each member of the expert system development team.

Question 3:

(7 Marks)

Objectives: This question is about the design of a fuzzy logic controller.

It is required to design a fuzzy logic controller with the following specifications: -

- Unified universe of discourse for all variables from -2 to +2 step 1.
- Three fuzzy sets definition (N, Z, and P) for all variables.

Then apply Mamdani algorithm to calculate the crisp action value for input of error = - 2, and change of error = + 1.