DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER VII [IT]
SUBJECT: (IT714) KNOWLEDGE SYSTEMS

Examination	**: Third Sessional**	**Seat No.**	**: _____**
Date	**: 12/10/2018**	**Day**	**: Friday**
Time	**: 2:30 to 3:45**	**Max. Marks**	**: 36**

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 **Do as directed.**

(a) Using given probability distribution table find P(~C/T). **[2]**

	T		~T	
	X	~X	X	~X
C	0.108	0.012	0.072	0.008
~C	0.016	0.064	0.144	0.576

(b) What is use of *frontstr*, *fronttoken*, *frontchar* and *str_len* predicates*?* **[2]**

(c) How to remove and retrieve facts from the dynamic database? **[2]**

(d) What is difference between probability and fuzzy logic? **[2]**

(e) Represent given sentence using Conceptual Dependency. **[2]**
"I ate ice-cream given by Monty."

(f) What is Means-End-Analysis? How does it work? **[2]**

Q.2 Attempt ***Any Two*** from the following questions. **[12]**

(a) What is Bayesian Networks? How can we deal with uncertainty using it? Take one example and write about its work. **[6]**

(b) Let, A = 0.3/1 + 0/2 + 0.4/3 + 1/5 , and
B = 0.2/1 + 0.3/2 + 0.2/4 + 0.4/5 .
For given fuzzy sets, find
(i) Cartesian multiplication (A*B) **[2]**
(ii) Algebraic multiplication(AB) **[2]**
(iii) Algebraic sum(A+B) **[2]**

(c) How does Simulated Annealing optimization algorithm work? Write steps of it and explain its work. **[6]**

Q.3 (a) Define expert system. Write in detail, What is use of each of its components. **[6]**

(b) Write Prolog codes for **[6]**
1. Reverse a list **2.** Print nth element from the given list **3.**Print last element of a list

OR

Q.3 (a) Your friend came to you with a problem of manually changing the temperature of Air Conditioner at his home. He asked you to create a Fuzzy control system which can automatically manage the temperature and fan speed by operating the room temperature.
Draw a diagram of fuzzy Control system for the given problem. **[2]**
Identify the variables and design fuzzy sets for them. **[2]**
Write rules to solve given problem. **[2]**

(b) (i) Write a script representation for "Dinner at a restaurant". **[3]**
(ii) Compare Script, Frame and Conceptual Dependency based on their representation strength. **[3]**