

Name :
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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
07 THRISSUR CLUSTER

SECOND SEMESTER M.TECH. DEGREE EXAMINATION APRIL 2018

Chemical engineering

Process Control

07CH6110 FUZZY SYSTEMS AND CONTROL

Time : 3 hours

Max.Marks: 60

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

Q.no.	Module 1	Marks
1a	Develop the model of artificial neuron.	4
	Answer b or c	
b	What are the appliances of artificial intelligence in process design?	5
c	What are the appliances of artificial intelligence in process control?	5
Q.no.	Module 2	Marks
2a	What are the different learning rules used in training.	4
	Answer b or c	
b	Write the middle layer computation of multilayer neural networks.	5
c	What are adaptive neural networks?	5
Q.no.	Module 3	Marks
3a	What is basin of attraction	4
	Answer b or c	
b	What are competitive networks?	5
c	What are self organising networks?	5

Q.no.	Module 4	Marks
4a	What is idempotence and identity in crisp set theory?	4
Answer b or c		
b	Verify Demorgans laws.	5
c	Verify associativity and distributivity in fuzzy set theory.	5
Q.no.	Module 5	Marks
5a	What is membership function? Explain with an example.	5
Answer b or c		
b	Explain fuzzy Cartesian product with an example.	7
c	Explain fuzzy relation with an example	7
Q.no.	Module 6	Marks
6a	Explain the static properties of fuzzy controller	5
Answer b or c		
b	What is rule base and how are rules made.	7
c	What are the different methods used in defuzzification and why is it done.	7