



Sanjay Ghodawat University, Kolhapur  
Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2018-19  
EXM/P/09/01

**Year and Program:** 2018-19  
**F.Y. M. Tech.**

**School of Technology**

**Department of Electronics  
Engineering**

**Course Code:** EES509.2

**Course Title:** Intelligence  
Systems – (Elective-I)

**Semester – I**

**Day and Date:** Monday  
26/12/2018

**End Semester Examination  
(ESE)**

**Time: 3 Hrs    Max Marks: 100**

**Instructions:**

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q1	Solve any Two	Marks	Bloom's Level	COs
a)	Write a note on History and evolution of Artificial Neural Network.	07	L <sub>6</sub>	CO1
b)	Explain in detail the basic structure of a Neuron/Perceptron.	07	L <sub>6</sub>	CO1
c)	Describe types of machine learning with reference to neurons.	07	L <sub>4</sub>	CO1
Q2	Solve any Two			
a)	Elaborate with a schematic XOR problem with a single perceptron.	06	L <sub>6</sub>	CO2
b)	Draw and explain the working of multilayer feed forward network.	08	L <sub>2</sub>	CO2
	OR			
b)	List all and describe in detail any one perceptron learning rule.	08	L <sub>2</sub>	CO2
Q3	Solve any Two			
a)	Describe the Disadvantages problems with back propagation algorithm.	07	L <sub>3</sub>	CO3
b)	Illustrate Boltzmann's training algorithm in neural networks	07	L <sub>2</sub>	CO3
c)	Elaborate Stability vs Plasticity dilemma in Neural N/W Training.	07	L <sub>6</sub>	CO3
Q4	Solve any Two			
a)	Describe Hopfield network with suitable diagram.	09	L <sub>3</sub>	CO4
b)	Explain Adaptive resonance theory (ART) in detail.	09	L <sub>6</sub>	CO4
c)	Explain with example character recognition using ANN	09	L <sub>6</sub>	CO4

<b>Q5</b>	<b>Solve any Two</b>			
a)	Compare and contrast between crisp set theory vs Fuzzy Set theory	10	L <sub>5</sub>	CO5
b)	Elaborate common operations on of Fuzzy Sets.	10	L <sub>6</sub>	CO5
c)	Explain t- norms and t-conorm used in Fuzzy sets.	10	L <sub>2</sub>	CO5
<b>Q6</b>	<b>Solve any Two</b>			
a)	Explain de-fuzzification methods.	10	L <sub>6</sub>	CO6
b)	Write short notes on: i) Fuzzy Quantifiers ii) Linguistic hedges.	10	L <sub>6</sub>	CO6
c)	Describe Fuzzy Control Systems with a neat diagram.	10	L <sub>2</sub>	CO6

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