

Government College of Engineering, Aurangabad

(An Autonomous Institute of Government of Maharashtra)

F.Y. MCA 2 Years MCA (CBCS) Examination

End Semester Examination July-Aug. 2022

MC1116: Soft Computing

Max. Marks: 60

Time: 3.15 Hours

“Verify the Course Code and check whether you have got the Correct Question Paper”

N.B.

1. Attempt all questions.

2. Figures to the right indicate full marks

3. Assume suitable data if necessary and state it clearly

04 AUG 2022

Q. No.	Questions	Course Outcomes (Cos)	Bloom's Taxonomy Levels (BTLs)	Marks
Q1.	Attempt any two from the following			
	a) Explain the Basic terminology associated with NN [Input, Weights, Net Input function, Activation function, List of activation functions, Error Propagation]	01	K1	06
	b) Explain different NNs architectures with suitable diagrams.	01	K2	06
	c) State and explain various training techniques used in ANN.	03	K1	06
Q2.	Attempt any two from the following			
	a) What is Pattern? What are different approaches in pattern recognition? How data is data classified using pattern classification? Explain.	02	K2	06
	b) What non-linearly separable problem? Explain XOR problem with sample data.	01	K2	06
	c) State and explain perceptron learning algorithm	02	K1	06
Q3.	Attempt any two from the following			
	a) State and explain the algorithm for radial basis function network and draw flowchart for it.	03	K1	06
	b) Explain how back propagation works and draw flowchart for it.	02	K2	06
	c) Obtain the output of the neuron using binary and bipolar sigmoidal function: $[x_1, x_2, x_3] = [0.5, 0.7, 0.3]$, $[w_1, w_2, w_3] = [0.4, 0.7, -0.4]$, bias is $b = 0.45$	01	K3	06
Q4.	Attempt any two from the following			
	a) Draw flowchart and write algorithm for KSOFM network.	03	K2	06
	b) Explain algorithm LVQ and Draw flowchart for the same.	03	K2	06
Q5.	Attempt any two from the following			
	a) Explain the properties and operations on fuzzy sets.	05	K3	06
	b) Consider the two given fuzzy sets $A = \{1/2, 0.3/4, 0.5/6, 0.2/0.8\}$ $B = \{0.5/2, 0.4/4, 0.1/6, 1/8\}$ Perform intersection, difference & complement.	05	K3	06