

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: ECCDLO7031 and Course Name: Neural Networks and Fuzzy Logic

Time: 1hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks.

Q1.	The cell body of neuron can be analogous to what mathematical operation?
Option A:	Summer
Option B:	Differentiator
Option C:	Integrator
Option D:	Subtractor
Q2.	The process of adjusting the weight is known as?
Option A:	Activation
Option B:	Synchronization
Option C:	Learning
Option D:	Thresholding
Q3.	In supervised learning
Option A:	Target vectors are known
Option B:	Target vectors can be partially known
Option C:	Target vectors are not known
Option D:	Sometimes known and sometimes not known
Q4.	A positive weight corresponds to _____ synapse
Option A:	Additive
Option B:	Integral
Option C:	Excitatory
Option D:	Inhibitory
Q5.	What kind of learning is involved in pattern clustering task?
Option A:	Supervised
Option B:	Unsupervised
Option C:	Learning with critic
Option D:	Hebb Learning
Q6.	How are input layer units connected to second layer in competitive learning networks?
Option A:	Feed forward manner

Option B:	Feedback manner
Option C:	Feed forward and feedback
Option D:	Recurrent manner
Q7.	What is classification?
Option A:	Deciding what features to use in a pattern recognition problem
Option B:	Deciding what class an input pattern belongs to
Option C:	Deciding what type of neural network to use
Option D:	Deciding the type of learning network
Q8.	In a two input and single output MP neuron with binary activation function, if weight $w_1=1$, $w_2=1$ and Threshold is 2, this network will act as
Option A:	AND gate
Option B:	OR Gate
Option C:	NOT gate
Option D:	EX OR Gate
Q9.	Which of the following neural networks would you use for time series prediction, e.g., weather forecasting?
Option A:	Simple recurrent network
Option B:	Self-organizing feature map
Option C:	The Hopfield network.
Option D:	A multi-layer feed forward network
Q10.	A perceptron with bipolar activation has input weights $w_1 = -3.9$, $w_2 = 1.1$, and $b=0$ with threshold value $T = 0.3$. What output does it give for the inputs $x_1 = 1.3$ and $x_2 = 2.2$?
Option A:	-2.65
Option B:	-2.3
Option C:	-1
Option D:	1
Q11.	What is Adeline in neural networks?
Option A:	Adaptive linear neuron
Option B:	Automatic linear neuron
Option C:	Adaptive line element
Option D:	Automatic line element
Q12.	Widrow & hoff learning law is special case of
Option A:	Hebb learning law
Option B:	Perceptron learning law
Option C:	Delta learning law
Option D:	Instar Law
Q13.	On what factor the number of output neurons depends?
Option A:	Distinct inputs
Option B:	Distinct classes
Option C:	Weights

Option D:	Threshold
Q14.	Signal transmission at synapse is a
Option A:	Physical process
Option B:	Chemical process
Option C:	Physical & chemical both
Option D:	Electrical process
Q15.	For a 3 input neuron and one output neuron architecture, the weights are given by (0.1, 0.3,-0.2), Inputs are given by (0.8, 0.6, 0.4) and the bias is 0.35. Calculate the output using binary sigmoidal function
Option A:	0.0625
Option B:	0.625
Option C:	0.259
Option D:	0.0259
Q16.	The Cardinality of fuzzy relation is
Option A:	0
Option B:	1
Option C:	-1
Option D:	Infinity
Q17.	Fuzzy lambda cut is based on
Option A:	Zadeh Notation
Option B:	Tsukamoto Principle
Option C:	Mamdani Principle
Option D:	Sugeno Principle
Q18.	The boundary element of a fuzzy membership function has
Option A:	Complete membership
Option B:	Partial Membership
Option C:	Non Zero Membership
Option D:	Abnormal membership
Q19.	Two dimensions of fuzzy relations are given by 3 x 4 and 3 x 4. The dimension of max min composition of R and S is given by
Option A:	2 x 2
Option B:	2 x 3
Option C:	3 x 3
Option D:	Composition not possible
Q20.	If A and B are two fuzzy sets with membership functions: $\mu_a(x) = \{0.1, 0.2, 0.2, 1\}$ $\mu_b(x) = \{0.2, 0.3, 0.4, 0.5\}$ the algebraic sum between two fuzzy sets is given by
Option A:	$\{0.2, 0.3, 0.4, 1\}$
Option B:	$\{0.3, 0.5, 0.6, 1\}$
Option C:	$\{0.28, 0.44, 0.52, 1\}$
Option D:	$\{0.02, 0.06, 0.08, 0.5\}$

Q21.	The fuzzy membership functions cannot be represented with
Option A:	Triangular membership
Option B:	Trapezoidal membership
Option C:	Gaussian membership
Option D:	Circular membership
Q22.	A fuzzy tolerance relation can be converted into fuzzy equivalence relation using
Option A:	AND
Option B:	OR
Option C:	Composition
Option D:	Cartesian product
Q23.	The bounded sum operation on fuzzy sets A and B is represented as
Option A:	$\min[1, \mu_A(x) + \mu_B(x)]$
Option B:	$\min[1, \mu_A(x) - \mu_B(x)]$
Option C:	$\max[1, \mu_A(x) + \mu_B(x)]$
Option D:	$\max[1, \mu_A(x) - \mu_B(x)]$
Q24.	For standard fuzzy intersection, which of the following hold?
Option A:	$\mu(a,b) = \min(\mu_a, \mu_b)$
Option B:	$\mu(a,b) = \max(\mu_a, \mu_b)$
Option C:	$\mu(a,b) = \mu_a - \mu_b$
Option D:	$\mu(a,b) = \mu_a + \mu_b$
Q25.	In this method of defuzzification the intersecting areas are added twice
Option A:	Weighted average
Option B:	Center of Sums
Option C:	Centroid
Option D:	Center of largest area