

1.	Neural networks are also referred to as (multiple answers) A) Neurocomputers      B) connectionist networks      C) parallel distributed processors      D) ANNs
2.	The property that permits developing nervous system to adapt to its surrounding environment A) Nonlinearity                      B) plasticity      C) interaction                                      D) transparency
3.	At the synaptic stages that is from receptor to bipolar cells and from bipolar to gangellion cells, specialized laterally connected neurons are called respectively A) Amacrine & horizontal cells                                      B) horizontal cells & gangellion cells C) Vertical & amacrine cells                                      D) horizontal cells & amacrine cells
4.	The energetic efficiency of the brain is approximately A) $10^{-16}$ J per operation per second                      B) $10^{-6}$ J per operation per second      C) $10^{-16}$ J per second D) $10^{-16}$ J per operation      E) $10^{-6}$ J per operation
5.	Axon of a neuron is characterized by A) Low electrical resistance & very large capacitance s      B) high electrical resistance & large capacitance C) High electrical resistance & low capacitance              D) low electrical resistance & low capacitance
6.	The value of Heaviside function for $v < 0$ is A) 1              B) 0              C) -1              D) v
7.	Sigmoid function is a) Linear      B) non linear              C) piecewise linear                                      D) combination of linear & non –linear
8.	Fan-in is A) Synaptic convergence              B) synaptic divergence                                      C) fan-out                                      D) transmittance
9.	In feedback AB is referred to as A) Closed loop operator      B) open loop operator      C) Time delay                                      D) architectural operator
10.	10-4-4-3-2 has the no. of hidden layers A) 4                      B) 5                      C) 3                      D) 2
11.	Items to be categorized as separate classes should be given widely _____ representation in the network A) Different              B) Random              C) complex                                      D) Same
12.	The founder of artificial neural networks is A) McCulloch              B) Rosenblatt              C) Hebb                                      D) Gabor
13.	Vapnik & coworkers invented in 1990 A) Analog VLSI and neural system      B) reinforcement learning      C) sigmoid belief networks      D) Support Vector machines
14.	A neuron j receives inputs from two other neurons whose activity levels are 10, -20 , 4, and –2. The respective synaptic weights of neuron j are 0.8, 0.2, -1.0 and –0.9. Calculate the output of a neuron when it is linear. Assuming that the bias applied is zero.

	A) 1      B) -1.8      C) 1.8      D) 0
15.	Widrow-Hoff rule is A) Error correction learning B) Boltzmann Learning C) Hebbian Learning D) competitive learning
16.	$\Delta w_{kj}(n) = \eta Y_k(n)x_j(n)$ is the formula according to the A) Error correction learning B) Boltzmann Learning C) Hebbian Hypothesis D) Competitive learning E) Covariance Hypothesis
17.	Reinforcement learning is closely related to A) Parallel programming B) Branch & Bound C) Greedy Programming D) Dynamic Programming E) Divide & Conquer
18.	Neurodynamic programming is A) Learning without a teacher B) Learning with a teacher C) Supervised learning D) reinforcement learning
19.	Associate one of the following learning tasks with a keyword Classification A) Pattern Association B) Pattern recognition C) Function Approximation D) Control E) Filtering
20.	Associate one of the following learning tasks with a keyword smoothing A) Pattern Association B) Pattern recognition C) Function Approximation D) Control E) Filtering
21.	Associate one of the following learning tasks with a keyword Memorized pattern A) Pattern Association B) Pattern recognition C) Function Approximation D) Control E) Filtering
22.	Associate one of the following learning tasks with a keyword MIMO A) Pattern Association B) Pattern recognition C) Function Approximation D) Control E) Filtering
23.	Associate one of the following learning tasks with a keyword Jacobean Matrix A) Pattern Association B) Pattern recognition C) Function Approximation D) Control E) Filtering
24.	Weight, height, age and number of teeth are chosen as features to determine the wool yield of a flock of sheep. This yields a space of A) 3-D B) 4-D C) 5-D D) 16-D
25.	What is a hyper plane? A) A fast jet B) A planar (flat) surface, in high dimensional space C) Any high-dimensional surface
26.	Why are linearly separable problems of interest to neural network researchers? A) Because they are the only class of problems that a network can solve successfully B) Because they are the only mathematical functions that are continuous C) Because they are the only mathematical functions you can draw D) Because they are the only class of problems a perceptron can solve successfully
27.	A multi-layer perceptron differs from the single layer perceptron in that it has more layers of perceptron-

	<p>like units.</p> <p>A) True - there are no other differences B) True - but there are other differences as well, that are at least as important</p> <p>C) False - layers refers to a mathematical effect and is not used in its usual sense here</p>
28.	<p>How can network learning be explained in terms of the error function?</p> <p>A) It can't - it's irrelevant</p> <p>B) The network learns by altering its weights to reduce the error each time</p> <p>C) The network reduces the error by altering the target patterns each time</p>
29.	<p>The sigmoid function is</p> <p>A) S-shaped B) Z-shaped C) A step function D) U-shaped</p>
30.	<p>What is a statistically optimal classifier?</p> <p>A) A classifier which calculates the nearest neighbor for a given test example.</p> <p>B) A classifier that gives the lowest probability of making classification errors.</p> <p>C) A classifier that minimizes the sum squared error on the training set.</p>
31.	<p>Which algorithm can be adapted to learning with and without a teacher</p> <p>A) Nearest neighbor B) Boltzmann learning rule C) k-nearest neighbor rule D) Hebbian learning</p>
32.	<p><math>W(n+1) = w(n) - H^{-1}(n)g(n)</math> is the formula for which adaptive filtering unconstrained optimization technique</p> <p>A) Steepest descent B) Newton Method C) Gauss- Newton Method D) linear Least Squares filter</p>
33.	<p>What are the virtues of LMS algorithm (multiple answers)</p> <p>A) Simplicity B) model independent C) optimal in accordance with min max criterion</p> <p>D) Slow rate of convergence E) sensitivity to variations in eigen structure</p>
34.	<p>Which is true</p> <p>A) Perceptron convergence algorithm is nonparametric while bayes classifier is parametric</p> <p>B) Perceptron convergence algorithm is parametric while bayes classifier is nonparametric</p> <p>C) Perceptron convergence algorithm and bayes classifier are non parametric</p> <p>D) Perceptron convergence algorithm &amp; bayes classifier are parametric</p>
35.	<p>The Back propagation is computationally faster in</p> <p>A) Sequential mode B) Batch Mode C) Both D) None of the two</p>
36.	<p>The techniques for Maximizing the information content in the examples provided for training the net are (Multiple answers)</p> <p>A) The use of an example that results in the largest training error</p> <p>B) Randomization C) emphasizing scheme D) Recursion</p>
37.	<p>The target values in the back propagation algorithm should normally be</p>

	<p>A) Fixed</p> <p>B) Highly variable</p> <p>C) Within the range of <math>+\epsilon</math> or <math>-\epsilon</math> to a value</p> <p>D) Within the range of <math>+\epsilon</math> only</p>
38.	<p>The initialization of synaptic weights &amp; thresholds for a back propagation algorithm should be with</p> <p>A) High value</p> <p>B) B) Low values</p> <p>C) Some values should be high &amp; some should be correlated</p> <p>D) Somewhere between low &amp; high extremes</p>
39.	<p>Which is not true with respect to leaning rate in a back propagation algorithm</p> <p>A) All neurons should ideally learn at the same rate</p> <p>B) The learning rate <math>\eta</math> should be assigned a higher value in the last layer then in the front layer</p> <p>C) The learning rate should be inversely proportional to the square root of the synaptic connections to that neuron.</p> <p>D) Neurons with many inputs should have a smaller rate than neurons with few inputs.</p>
40.	<p>Sub sampling in the convolutional networks</p> <p>A) Reduces the sensitivity of the feature map's output to shifts &amp; distortion</p> <p>B) Increases the sensitivity of the feature map's output to shifts &amp; distortion</p> <p>C) Does not affect the sensitivity of the feature map's output to shifts &amp; distortion</p> <p>D) Does not helps in regard to the feature map's output to shifts &amp; distortion</p>
41.	<p>The area of computer science dealing with neural networks, AI, Fuzzy set theory, regression is called</p> <p>A) Software computer    B) Hard computing    C) soft computing    D) pervasive computing</p>
42.	<p>The membership of a set is defined in terms of a membership function that gives the individual element's participation in the set as a value between 0 and 1 &amp; not the binary value. This concept is key feature of</p> <p>A) Regression &amp; optimization    B) Parallel &amp; distributed networks    C) Artificial neural networks    D) Fuzzy Set theory</p>
43.	<p>The important problem sighted in every model of the neural network is referred to as</p> <p>A) XOR problem    B) OR Problem    C) NOR problem    D) Logic Problem</p>
44	<p>The XOR problem is not solvable using a single perceptron because</p> <p>A) The outputs cannot be linearly classified in two classes</p> <p>B) The single perceptron only deals with two outputs</p> <p>C) The single perceptron does not handle such type of problems</p> <p>D) The output cannot be non linearly classified in two classes</p>
45	<p>In reference to Network pruning technique one of these is false</p>

	<p>A) The weights of the neurons of the network are reduced by using penalty terms for weak neurons</p> <p>B) The network can be divided into important &amp; not important neurons</p> <p>C) The weights of some neurons keeps increasing while for others keeps decreasing</p> <p>D) Weight Decay &amp; weight elimination are correct forms of complexity regularization</p>
46	<p>Find out the true statement</p> <p>A) From one iteration to the next iteration every learning rate parameter should not be allowed to change.</p> <p>B) When the derivative of the cost function with respect to a synaptic weight has the same algebraic sign for several consecutive iterations of the algorithm, the learning rate parameter for that particular weight should be decreased</p> <p>C) When the derivative of the cost function with respect to a synaptic weight has the alternate algebraic sign for several consecutive iterations of the algorithm, the learning rate parameter for that particular weight should be increased</p> <p>D) Every adjustable network parameter of the cost function should have its own individual learning rate parameter</p>
47	<p>R which is a split parameter for cross validation data lies between the range of 0 and 1 , as per popular studies the optimistic value of r is      A) 0.5   B ) 0.1   C ) ).4   D ) 0.2</p>
48	<p>The boundary condition for the OR function can be</p> <p>A) <math>y+x+1=0</math>   B) <math>y+x-1=0</math>   C) <math>y=0</math>   D) <math>X=0</math></p>