



CO Mapped	CO1
MCQ type questions (1.5 marks each)	8 ques
<b>For CO 1: 8 MCQs*1.5 marks each</b>	<b>20 marks</b>

- Q. 1. A perceptron is:
- a single layer feed-forward neural network with pre-processing
  - an auto-associative neural network
  - a double layer auto-associative neural network
  - a neural network that contains feedback
- Q. 2. An auto-associative network is:
- a neural network that contains no loops
  - a neural network that contains feedback
  - a neural network that has only one loop
  - a single layer feed-forward neural network with pre-processing
- Q. 3. Which is true for neural networks?
- It has set of nodes and connections
  - Each node computes it's weighted input
  - Node could be in excited state or non-excited state
  - All of the mentioned
- Q. 4. Why is the XOR problem exceptionally interesting to neural network researchers?
- Because it can be expressed in a way that allows you to use a neural network
  - Because it is complex binary operation that cannot be solved using neural networks
  - Because it can be solved by a single layer perceptron
  - Because it is the simplest linearly inseparable problem that exists.
- Q. 5. What is back propagation?
- It is another name given to the curvy function in the perceptron
  - It is the transmission of error back through the network to adjust the inputs
  - It is the transmission of error back through the network to allow weights to be adjusted so that the
  - none of the mentioned
- Q. 6. Why are linearly separable problems of interest of neural network researchers?
- Because they are the only class of problem that network can solve successfully
  - Because they are the only class of problem that Perceptron can solve successfully
  - Because they are the only mathematical functions that are continue

- d) Because they are the only mathematical functions you can draw
- Q. 7. Why do we need biological neural networks?
- a) to solve tasks like machine vision & natural language processing
  - b) to apply heuristic search methods to find solutions of problem
  - c) to make smart human interactive & user friendly system
  - d) all of the mentioned
- Q. 8. What is the trend in software nowadays?
- a) to bring computer more & more closer to user
  - b) to solve complex problems
  - c) to be task specific
  - d) to be versatile

CO Mapped	CO2
MCQ type questions (1.5 marks each)	8 ques
<b>For CO 2: 8 MCQs*1.5 marks each</b>	<b>20 marks</b>

- Q. 9. What's the main point of difference between human & machine intelligence?
- a) human perceive everything as a pattern while machine perceive it merely as data
  - b) human have emotions
  - c) human have more IQ & intellect
  - d) human have sense organs
- Q. 10. What is auto-association task in neural networks?
- a) find relation between 2 consecutive inputs
  - b) related to storage & recall task
  - c) predicting the future inputs
  - d) none of the mentioned
- Q. 11. Which of the following is not the promise of artificial neural network?
- a) It can explain result
  - b) It can survive the failure of some nodes
  - c) It has inherent parallelism
  - d) It can handle noise
- Q. 12. The network that involves backward links from output to the input and hidden layers is called as \_\_\_\_\_.
- a) Self organizing maps

- b) Perceptrons
- c) Recurrent neural network**
- d) Multi layered perceptron

Q. 13. Which of the following is an application of NN (Neural Network)?

- a) Sales forecasting
- b) Data validation
- c) Risk management

**d) All of the mentioned**

Q. 14. Which of the following is the model used for learning?

- a) Decision trees
- b) Neural networks
- c) Propositional and FOL rules

**d) All of the mentioned**

Q. 15. What is used in determining the nature of the learning problem?

- a) Environment
- b) Feedback**
- c) Problem

d) All of the mentioned

Q. 16. In an Unsupervised learning

- a) Specific output values are given
- b) Specific output values are not given**
- c) No specific Inputs are given
- d) Both inputs and outputs are given

CO Mapped	CO3
MCQ type questions (1.5 marks each)	8 ques
<b>For CO 3: 8 MCQs*1.5 marks each</b>	<b>20 marks</b>

Q. 17. A perception check is

- a) a cognitive bias that makes us listen only to information we already agree with.
- b) a method teachers use to reward good listeners in the classroom.
- c) any factor that gets in the way of good listening and decreases our ability to interpret correctly.
- d) a response that allows you to state your interpretation and ask your partner whether or not that**

- Q. 18. Which algorithm will work backward from the goal to solve a problem?
- a) Forward chaining
  - b) Backward chaining**
  - c) Hill-climb algorithm
  - d) None of the mentioned
- Q. 19. What are the requirements of learning laws?
- a) convergence of weights
  - b) learning time should be as small as possible
  - c) learning should use only local weights
  - d) all of the mentioned**
- Q. 20. Which of the following model has ability to learn?
- a) McCulloch-pitts model
  - b) rosenblatt perceptron model**
  - c) both rosenblatt and pitts model
  - d) neither rosenblatt nor pitts
- Q. 21. What is an activation value?
- a) weighted sum of inputs**
  - b) threshold value
  - c) main input to neuron
  - d) none of the mentioned
- Q. 22. Positive sign of weight indicates?
- a) excitatory input**
  - b) inhibitory input
  - c) can be either excitatory or inhibitory as such
  - d) none of the mentioned
- Q. 23. The amount of output of one unit received by another unit depends on what?
- a) output unit
  - b) input unit
  - c) activation value
  - d) weight**
- Q. 24. What does a neuron compute?
- a) A neuron computes an activation function followed by a linear function ( $z = Wx + b$ )
  - b) A neuron computes a linear function ( $z = Wx + b$ ) followed by an activation function**

- c) A neuron computes a function  $g$  that scales the input  $x$  linearly ( $Wx + b$ )
- d) A neuron computes the mean of all features before applying the output to an activation function

CO Mapped	CO4
MCQ type questions (1.5 marks each)	8 ques
<b>For CO 4: 8 MCQs*1.5 marks each</b>	<b>20 marks</b>

- Q. 25. You are building a binary classifier for recognizing cucumbers ( $y=1$ ) vs. watermelons ( $y=0$ ). Which one of these activation functions would you recommend using for the output layer?
- a) ReLU
  - b) Leaky ReLU
  - c) sigmoid**
  - d) tanh
- Q. 26. Suppose you have built a neural network. You decide to initialize the weights and biases to be zero. Which of the following statements is True?
- a) Each neuron in the first hidden layer will perform the same computation. So even after multiple iterations of gradient descent each neuron in the layer will be computing the same thing as other neurons.**
  - b) Each neuron in the first hidden layer will perform the same computation in the first iteration. But after one iteration of gradient descent they will learn to compute different things because we have “broken symmetry”.
  - c) Each neuron in the first hidden layer will compute the same thing, but neurons in different layers will compute different things, thus we have accomplished “symmetry breaking” as described in lecture.
  - d) The first hidden layer’s neurons will perform different computations from each other even in the first iteration; their parameters will thus keep evolving in their own way.
- Q. 27. Logistic regression’s weights  $W$  should be initialized \_\_\_\_\_, because if you initialize to all zeros, then logistic regression will fail to learn a useful decision boundary because it will fail to “break symmetry”
- a) randomly rather than to all zeros**
  - b) Initialize to all zeros
  - c) Should not initialize
  - d) Both a and b are correct
- Q. 28. You have built a network using the tanh activation for all the hidden units. You initialize the weights to relative large values, using `np.random.randn(...)*1000`. What will happen?
- a) It doesn’t matter. So long as you initialize the weights randomly gradient descent is not affected by whether the weights are large or small.

- b) This will cause the inputs of the tanh to also be very large, thus causing gradients to also become large. You therefore have to set  $\eta$  to be very small to prevent divergence; this will slow down learning.
  - c) This will cause the inputs of the tanh to also be very large, causing the units to be “highly activated” and thus speed up learning compared to if the weights had to start from small values.
  - d) This will cause the inputs of the tanh to also be very large, thus causing gradients to be close to zero. The optimization algorithm will thus become slow.
- Q. 29. What is the "cache" used for in our implementation of forward propagation and backward propagation?
- a) It is used to cache the intermediate values of the cost function during training.
  - b) We use it to pass variables computed during forward propagation to the corresponding backward propagation step. It contains useful values for backward propagation to compute derivatives.
  - c) It is used to keep track of the hyperparameters that we are searching over, to speed up computation.
  - d) We use it to pass variables computed during backward propagation to the corresponding forward propagation step. It contains useful values for forward propagation to compute activations.
- Q. 30. Suppose you have  $N = 200$  data points but  $M = 200$  hidden units for each layer. What problem(s) are you likely to encounter when training such a network?
- a) Overfitting
  - b) underfitting
  - c) testing error
  - d) validation error
- Q. 31. Neuro software is \_\_\_\_\_
- a) A software used to analyze neurons
  - b) It is powerful and easy neural network
  - c) Designed to aid experts in real world
  - d) It is software used by Neuro surgeon
- Q. 32. In which of the following learning the teacher returns reward and punishment to learner?
- a) Active learning
  - b) Reinforcement learning
  - c) Supervised learning
  - d) Unsupervised learning

CO Mapped	CO5
MCQ type questions (1.5 marks each)	8 ques
<b>For CO 5: 8 MCQs*1.5 marks each</b>	<b>20 marks</b>

- Q. 33. Which of the following is not an application of learning?
- Data mining
  - WWW
  - Speech recognition
  - None of the mentioned**
- Q. 34. Which of the following is the component of learning system?
- Goal
  - Model
  - Learning rules
  - All of the mentioned**
- Q. 35. Following is also called as exploratory learning:
- Supervised learning
  - Active learning
  - Unsupervised learning**
  - Reinforcement learning
- Q. 36. How many types of learning are available
- 1
  - 2
  - 3**
  - 4
- Q. 37. How many possible sources of complexity are there in forward chaining?
- 1
  - 2
  - 3**
  - 4
- Q. 38. Which of the following sentence is FALSE regarding regression?
- It relates inputs to outputs.
  - It is used for prediction.
  - It may be used for interpretation.



- d) It discovers causal relationships.
- Q. 39. What is reinforcement learning?  
 a) learning is based on evaluative signal  
 b) learning is based on desired output for an input  
 c) learning is based on both desired output & evaluative signal  
 d) none of the mentioned
- Q. 40. What's the actual reason behind the boundedness of the output function in activation dynamics?  
 a) limited neural fluid  
 b) limited fan in capacity of inputs  
 c) both limited neural fluid & fan in capacity  
 d) none of the mentioned

Type of Question/Marks	CO1	CO2	CO3	CO4	CO5	
<i>True False (2 marks each)</i>	4 ques	4 ques	4 ques	4 ques	4 ques	20 questions
<i>Q. No.</i>	Q. No. 41-44	Q. No. 45-48	Q. No. 49-52	Q. No. 53-56	Q. No. 57-60	40 marks

- Q. 41. In hebbian learning synaptic strength is proportional to correlation between firing of post & presynaptic neuron  
**TRUE**
- Q. 42. The false minima be reduced by using probabilistic update in case of error in recall in feedback neural networks  
**TRUE**
- Q. 43. The advantage of basis function over multilayer feedforward neural networks (MLFFNN) is training of basis function is faster than MLFFNN  
**TRUE**
- Q. 44. The advantages of neural networks over conventional computers is that They have the ability to learn by example  
**TRUE**
- Q. 45. Neural networks are more fault tolerant than conventional computers  
**TRUE**

Q. 46. Neural networks are more suited for real time operation due to their high 'computational' rates

TRUE

Q. 47. Single layer associative neural networks do not have the ability to perform pattern recognition

FALSE

Q. 48. Single layer associative neural networks do not have the ability to find the parity of a picture

TRUE

Q. 49. Single layer associative neural networks do not have the ability to determine whether two or more shapes in a picture are connected or not

TRUE

Q. 50. Having multiple perceptrons can actually solve the XOR problem satisfactorily: this is because each perceptron can partition off a linear part of the space itself, and they can then combine their results.

TRUE

Q. 51. On average, neural networks have higher computational rates than conventional computers.

TRUE

Q. 52. Neural networks learn by example.

TRUE

Q. 53. Neural networks mimic the way the human brain works.

TRUE

Q. 54. The training time depends on the size of the network.

TRUE

Q. 55. Neural networks can be simulated on a conventional computer.

TRUE

Q. 56. Artificial neurons are identical in operation to biological ones.

**FALSE**

Q. 57. A perceptron adds up all the weighted inputs it receives, and if it exceeds a certain value, it outputs a 1, otherwise it just outputs a 0.

**TRUE**

Q. 58. Continuous perceptron learning is also known as delta learning?

**TRUE**

Q. 59. Widrows LMS algorithm is also based on error correction learning?

**TRUE**

Q. 60. Error correction learning is like learning with teacher?

**TRUE**