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| UNIT-1 |
| What is MP neuron? |
| Tell about Thresholding logic. |
| Relate MP neuron with biological neuron. |
| Notes limitations on MP neuron. |
| Explain Perceptron model with architecture? |
| Implement ANDNOT gate using MP Neuron |
| Differentiate between McCulloch-Pits Model and Perceptron model? |
| What are the limitations of theMP neuron model, and how are these limitations addressed by the perceptron model? Discuss in detail. |
| State and prove Convergence theorem for Perceptron Learning Algorithm. |
| What do mean by non-separable dataset. Implement XOR Boolean function using MP neuron. |
| Design model for AND, OR and Tautology function using MP Neuron with geometric interpretation. |
| Design model for NAND, and NOR using MP Neuron and discuss their geometric interpretation |

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| UNIT-2 |
| Explaingradient descent in ANN? |
| Briefly explain about dropout. |
| What is trainable parameter and hyperparameters? |
| What is the role of the encoder and decoder in an autoencoder architecture? |
| Explain multilayer perceptron with architecture and computations? |
| Tell about (a) Stochastic Autoencoder?  (b)Contractive Autoencoder? |
| What is Regularization? Discuss L1, L2 regularization. |
| Differentiate batch, stochastic and minibatch gradient descent. |
| What is Bias, Variance and Trade-off. Explain briefly with example. |
| Explain forward propagation and backpropagation in ANN with example. |
| Discuss following terms   1. Data augmentation 2. Early stopping 3. Vanishing gradient 4. Loss function |
| Explain types of Autoencoders with Architectures |