Time: 3hrs **[Total Marks:80]**

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) Assume suitable data, if required and state it clearly.

Q1		Attempt any **four** from the following	[20]
	A	Describe underfitting, overfitting and bias variance trade-off.	
	B	Explain loss functions. How to choose output and loss function? Illustrate with different cases.	
	C	Explain dropout and early stopping regularization methods in deep learning models.	
	D	State any five applications of deep learning.	
	E	Describe any five activation functions.	
Q2	A	Explain biological neuron. Differentiate between biological and artificial neuron.	[10]
	B	Describe Back propagation training algorithm.	[10]
Q3	A	Explain any two types of autoencoders.	[10]
	B	Explain Mcculloch Pitt model. Design simulation of NOR gate & NAND gate using Mcculloch Pitt Model.	[10]
Q4	A	Explain input shape, output shape, filter, padding, stride, tensors.	[10]
	B	Illustrate any two applications of GAN.	[10]
Q5	A	Explain the architecture and training of GAN.	[10]
	B	Illustrate ZFNet and VGGNet deep learning architectures.	[10]
Q6		Attempt any **four** from the following	[20]
	A	Illustrate CNN architecture.	
	B	What is the difference between feed forward neural network and RNN.	
	C	Explain the process of convolution as backpropagation.	
	D	Describe the different types of GAN's.	
	E	Explain the architecture of RNN.	

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