(3 Hours) [Total Marks: 80]

N. B. 1. Question **No. 1** is Compulsory
2. Attempt any **three** questions, from the remaining five questions.
3. Assume suitable data if **necessary** and justify the assumption.
4. Figure to the **right** indicates full marks

Q1.		Attempt any **four** of following	[20]
	A	Design NAND gate using Mc-culloch Pitt Model.	
	B	What is activation function? Describe any two activation function.	
	C	Discuss regularization in autoencoders.	
	D	Explain Padding and Stride.	
	E	Describe Sequence Learning Problem.	
Q2.	A	Explain Optimization. Discuss SGD and Adam Optimization algorithms.	[10]
	B	Explain LSTM architecture in detail.	[10]
Q3.	A	Describe different types of autoencoders	[10]
	B	What is significance of Loss function? Describe MSE and Cross Entropy.	[10]
Q4.	A	Discuss RNN learning.	[10]
	B	Explain Convolution and pooling operation with an example.	[10]
Q5.	A	Explain Early stopping, Batch normalization, Data augmentation.	[10]
	B	Elaborate working of GAN.	[10]
Q6.		Attempt any **two** from the following.	[20]
	A	Elaborate LeNET architecture.	
	B	What is significance of Vanishing and Exploding Gradients.	
	C	Explain contractive autoencoders. Give its applications.	

****