Instructions:

*1) 30 min for write up. 60 min to scan and upload your write up and **click turn-in***.
2) Student have to write their answers in their own handwriting on a white sheet.
*3) **On the top of answer sheet, mandatorily student should write name, sem,
Reg no., Course name, and student signature.***
4) Pages scanned should be included in a single file before uploading.

Q1. For the given Neural network

X1	X2	Y
0	0	
0	1	
1	0	
1	1	
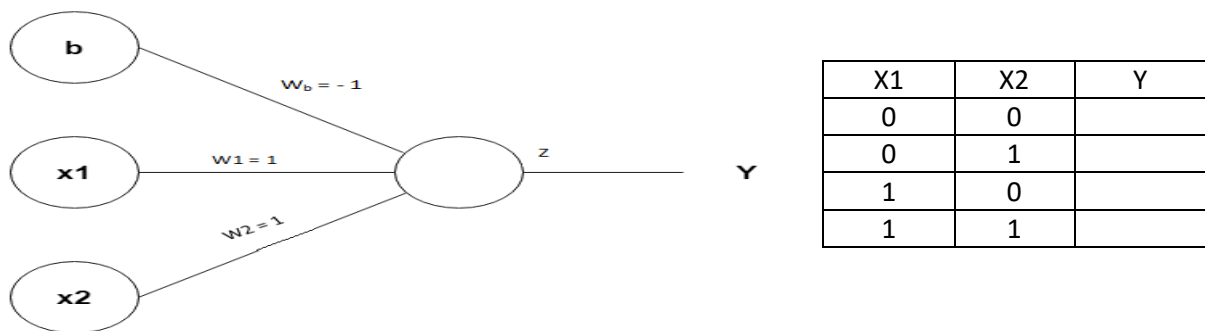
In the diagram the weights W1 = W2 = 1 and bias b weight W_b = -1.

For the different input combinations of X1 and X2 along with the weights W1, W2
and bias b the following o/p Z is obtained:
0 + 0 − 1 = −1
0 + 1 − 1 = 0
1 + 0 − 1 = 0
1 + 1 − 1 = 1
Note that sigmoid activation function is used on Z to get Y.
Which logic gate is satisfied with this Neural network? Justify your answer how this
neural network works to get the o/p of this logic gate.   2Marks

Q2. You know one of the responsibility of the Autoencoder is the dimensionality
reduction of the input data and the encoder part is involved in doing it. Can you
think of using Restricted Boltzmann Machine / s (RBM) to do the same? If so, draw
a diagrammatic approach by introducing RBM(s) in place of encoder and explain.
What is the benefit /drawback you get out of it?   3Marks