MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

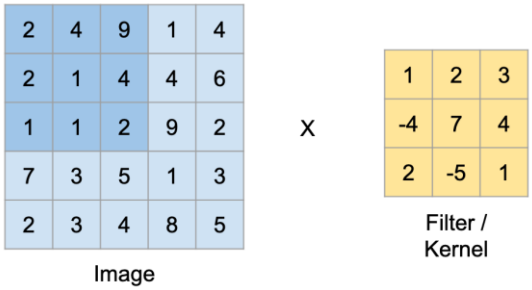
VII SEMESTER B. TECH (COMPUTER SCIENCE AND ENGINEERING)
END SEMESTER EXAMINATION, DECEMBER 2021 (POE)
SUBJECT: PE-VII DEEP LEARNING (CSE 4064)
REVISED CREDIT SYSTEM

Date: 22-Dec-2021 Time: 2:20 PM to 3:35 PM MAX. MARKS: 20

Note: Answer ALL the questions. Assume any missing data

PART-B

		Marks
1A	Apply convolution operation with stride =1 to the following image with the given kernel.	5



If you repeat the process of convolution and pooling with size (2,2) for the next two layers in sequence as shown below, how many parameters you would get at each layer? Ignore biases and assume stride = 1.

Input→ Conv → Pooling → Conv → Pooling→ Fully Connected with 3 Neurons

1B.	While training a neural network for classification task, it is observed that there is a massive gap between the training accuracy (98%) and the test accuracy (40%). How dropout method can be used to reduce the gap and also reduce the complexity of the model?	3
1C.	You are performing a binary classification task. Which activation function is suitable for your model? Justify	2
2A.	Consider a gray scale image of resolution 256 X 256, which category of machine learning task need to be considered so that a high-resolution color image may be produced as an output. What additional input data you may require achieving this? Justify your answer.	4
2B.	As you train your model, you realize that you do not have enough data. List the techniques that can be used to overcome the shortage of data. Conclude the answer with valid justification.	4
2C.	Outline the differences between tensors and other mathematical objects.	2