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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-2 EXAMINATION (OCT 2019)

Ph.D. (1st SEM)

Course Code: 18M1WCI332

Max. Marks: 25

Course Name: Deep Learning

Max. Time: 1.5 Hrs

Course Credit: 3

Note: All questions are compulsory

- Q. No. 1 Perform vertical and horizontal edge detection using convolution operator for following 6*6 grey scale image. [5 Marks]
[CO-3]

3	0	1	2	7	4
1	5	8	9	3	1
2	7	2	5	1	3
0	1	3	1	7	8
4	2	1	6	2	8
2	4	5	2	3	9

- Q. No. 2 (a) Does deep learning have *Bias and Variance Trade-off*? [3+2
Justify your answer with suitable example. Marks]
(b) Discuss distribution of *Training/Development/Testing* [CO-2]
dataset in deep learning?
- Q. No. 3 High bias and high variance are one of the major challenge [2+3
when training deep neural networks. Answer following Marks]
questions by providing suitable examples. [CO-2]
(a) What causes high bias and high variance in deep neural
networks?
(b) What are the basic possible solutions for removing high
bias and high variance in deep neural networks.
- Q. No. 4 (a) How regularization removes the overfitting problem in [2+3
deep neural network? Marks]
(b) Discuss Dropout Regularization for deep neural network [CO-2]
taking an example neural network.
- Q. No. 5 Discuss following algorithms with relation to optimization of [2+3
training neural network? Marks]
(a) Mini-Batch algorithm [CO-2]
(b) RMSProp optimization algorithm.