

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
TEST-1 EXAMINATION (FEB 2020)

B. Tech. (8<sup>th</sup> SEM)

Course Code: 18B1WCI831

Max. Marks: 15

Course Name: Deep Learning

Max. Time: 1 Hrs

Course Credit: 3

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**Note: All questions are compulsory**

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- Q. No. 1 (a) What are the major differences between traditional neural network and deep neural network? [1+2 Marks]  
(b) State main reasons which established deep neural network one of the prominent tools in image classification, voice analytics and other AI applications? [CO-1]
- Q. No. 2 Calculate loss function  $l(\hat{y}, y)$  and cost function  $J(w, b)$  of logistic regression using deep neural network. [3 Marks] [CO-1]
- Q. No. 3 Explain following terms in relation to deep neural network. [3 Marks] [CO-2]  
i. Under-fitting  
ii. Over-fitting  
iii. Dropout regularization
- Q. No. 4 There is a feed forward multi-layer neural network which has 1 hidden layer with 4 neurons each. There are 4 inputs and one output of this neural network. Explain in detail [6 Marks] [CO-2]  
i. Forward pass of neural network with proper representation.  
ii. Backward pass of neural network.  
iii. Size of matrix at each layer.