JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-1 EXAMINATION (SEP 2019)
Ph.D. (1st SEM)

Course Code: 18M1WCI332
Course Name: Deep Learning
Course Credit: 3

Max. Marks: 15
Max. Time: 1 Hrs

Note: All questions are compulsory

Q. No. 1   (a) What makes a simple neural network to be a deep neural network?   **[1+2 Marks] [CO-1]**
(b) What changed in last few years which makes deep learning a huge success in image classification, voice analytics and other AI applications?

Q. No. 2   Gradient descent is used to train the parameters w and b for logistic regression neural network. Explain how Gradient descent works with respect to logistic regression neural network cost function $J(w, b)$.   **[3 Marks] [CO-1]**

Q. No. 3   When you build a neural network, you need to make a choice of choosing activation function at each layer of neural network. Explain why activation functions are important and list any three activation functions which you prefer to choose in your designed neural network.   **[3 Marks] [CO-2]**

Q. No. 4   There is a feed forward multi-layer neural network which has 2 hidden layers with 3 neurons each. There are 4 inputs and one output of this neural network. Explain in detail   **[6 Marks] [CO-2]**
(a) Forward pass of neural network with proper representation.
(b) Backward pass of neural network.
(c) Size of matrix at each layer.