Dr. Rajinder Sandhu

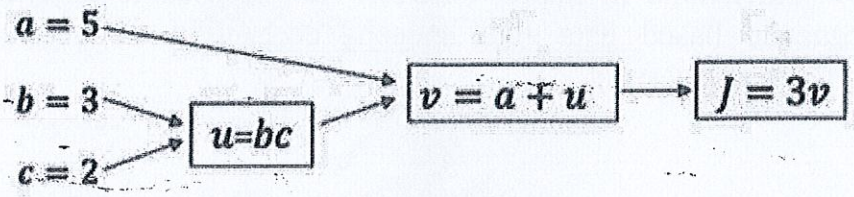
JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-3 EXAMINATION (DEC 2019)
Ph.D. (1st SEM)

Course Code: 18M1WCI332 Max. Marks: 35
Course Name: Deep Learning Max. Time: 2 Hrs
Course Credit: 3

Note: All questions are compulsory

Q. No. 1 What is logistic regression? How it can be derived using deep neural networks? **[2+3 Marks] [CO-1]**

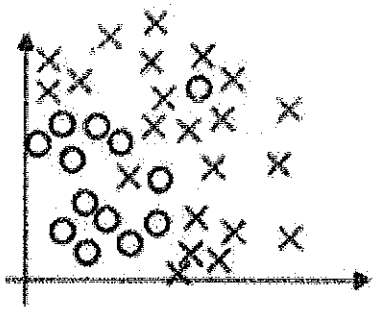
Q. No. 2 Compute the forward pass and backward pass of following computation graph? **[5 Marks] [CO-2]**



Q. No. 3 Discuss equation, graph, pros and cons of following activation function: **[2+2+1 Marks] [CO-1]**
i. Sigmoid Function
ii. tanh function
iii. ReLu function

Q. No. 4 What will happen if we initialize all the weights of neural network to **[2+2+1 Marks] [CO-2]**
i. Zero
ii. Random between Zero and One
iii. One
Discuss in brief the affect on any neural network.

Q. No. 5 Discuss the Bias and Variance Tradoff in Figure below. Where should the partition perform to achieve **[2+2+1 Marks] [CO-3]**
i. high bias
ii. high variance
iii. just right



Q. No. 6 (a) Explain in brief the concept of vanishing/exploding gradient in training of deep neural network. **[3+2 Marks]**
(b) How data augmentation increases the data size? What kind of augmentation can be done on any image file? **[CO-3]**

Q. No. 7 (a) Which kind of data CNN networks analyze better and why? **[3+2 Marks]**
(b) Which kind of neural network can be used to analyze sequence based data like speech recognition or natural language processing. **[CO-4]**