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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-2 makeup EXAMINATION, April 2018

B.Tech (BI) VI Semester

COURSE CODE: 10B11BI612 **MAX. MARKS: 25**

COURSE NAME: Machine learning for Bioinformatics

COURSE CREDITS: 04 **MAX. TIME: 1.5 HR**

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Marks are indicated against each question.

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1. What is 'hidden' in a Hidden Markov Model? (1)

2. Which limitations of the perceptron motivated the development of multi-layer perceptron? (1)

3. Highlight the differences between sequential mode and batch mode of training an artificial neural network. (2)

4. How do we intitialize the weights in ANN? How do we prevent overfitting in ANN? (2+3)

5. Explain the limitations of traditional backpropagation. How do we circumvent these limitations using the advanced versions of backpropagation? (5)

6. Describe the role of activation function in perceptron and multi-layer perceptron along with the respective mathematical expressions. Also discuss the differences in the error functions of the two. (5)

7. What is Hebb's rule in artificial neural networks? State the weight update formulae used in perceptron and multi-layer perceptron. (6)