

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-1 EXAMINATION, Feb 2018

B.Tech (BI) VI Semester

COURSE CODE: 10B11BI112

MAX. MARKS: 15

COURSE NAME: Machine Learning in Bioinformatics

COURSE CREDITS: 04

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Each question carry equal marks.

1. Given Initial values: $w_0(0)=-0.05$, $w_1(0)=-0.02$, $w_2(0)=0.02$, and $\eta=0.25$. Show how perceptron can be used to solve the AND Gate. You must use atleast two iterations. (5)
2. Explain the difference between liberal and conservative performance in ROC analysis. (2)
3. Consider the data for serum ferritin as a test for iron deficiency anemia. Plot the ROC. (5)

Serum ferritin (mmol/l)	# with IDA (% of total)	# without IDA (% of total)
< 15	474	20
15-34	175	79
35-64	82	171
65-94	30	168
> 94	48	1332

4. What is Hebb's rule in artificial neural networks? State the weight update formulae used in perceptron. (3)