

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- SEPTEMBER 2018

M.Tech. III Semester

COURSE CODE: 13M1WCI331

MAX. MARKS: 15

COURSE NAME: **Machine Learning**

COURSE CREDITS: 03

MAX. TIME: 1Hr

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

1. Explain information hierarchy with suitable diagram. How machine learning algorithms are different from ordinary computer algorithms? What are the different contemporary challenges to machine learning research community? [2+1+2]
2. Consider age attribute {10, 20, 30, 40, and 50}. Do data normalization using
 - (i) Min-max normalization with range [-5,5]
 - (ii) Z-score Normalization
 - (iii) Normalization by Decimal scaling

What do you mean by entity identification problem? Explain with suitable example. Also name and explain the method to cope with the same. [3+2]

3. Suppose we are interested in analyzing transactions at ALLELECTRONICS with respect to the purchase of computer games and videos. Of the 10000 transactions analyzed, the data show that 6000 of the customer transactions included computer games, while 7500 included videos and 4000 included both computer games and videos. (i) Make the contingency table and calculate degree of freedom (ii) Compute the correlation using chi-square statistics. The chi-square value for alpha 0.001 for the computed degree of freedom is 10.57. Conclude whether the hypothesis is true or false. [5]