C.U.SHAH UNIVERSITY
Summer Examination-2018

Subject Name : Machine Learning

Subject Code : 4TE08MLE1   **Branch:** B.Tech. (CE)

Semester : 8   **Date :** 01/05/2018   **Time :** 02:30 To 05:30   **Marks :** 70

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1   **Attempt the following questions:**
a)   What is unsupervised learning?   **(01)**
b)   What do you mean by prior probability in context of naive Bayes algorithm?   **(01)**
c)   Give the difference between Data Mining and Machine Learning.   **(01)**
d)   What is inductive machine learning?   **(01)**
e)   What are the three stages to build the hypotheses or model in machine learning?   **(01)**
f)   What is the standard approach to supervised learning?   **(01)**
g)   What is 'Training set'?   **(01)**
h)   What is the difference between Artificial Learning and Machine Learning?   **(01)**
i)   What is Model Selection in Machine Learning?   **(01)**
j)   List the two components of Bayesian logic program.   **(01)**
k)   Give popular applications of machine learning that you see on day to day basis.   **(01)**
l)   What is 'Over-fitting' in Machine learning?   **(01)**
m)   What is space search?   **(01)**
n)   What is Reduced Error Pruning?   **(01)**

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**
a)   Explain Candidate elimination algorithm with suitable example.   **(07)**
b)   Explain the design process of learning system.   **(07)**

Q-3   **Attempt all questions**
a)   **(07)**
       1) Explain various issues in machine learning.
       2) Explain List-Then-Eliminate Algorithm.
b)   Explain Perceptrons in artificial neural network.   **(07)**

Q-4   **Attempt all questions**
a)   Explain Inductive bias in Decision Tree.   **(07)**
b)   Explain Back Propagation Algorithm.   **(07)**

Q-5   **Attempt all questions**
    a) Discuss Bayes optimal classifier in detail. **(07)**
    b) Explain model of evolution and learning. **(07)**

Q-6   **Attempt all questions**
    a) Explain representation of genetic programming with suitable example. **(07)**
    b) Discuss EM algorithm in detail. **(07)**

Q-7   **Attempt all questions**
    a) Explain induction as inverted deduction. **(07)**
    b) What is Q-Learning? Explain Q-Learning with its algorithm and example. **(07)**

Q-8   **Attempt all questions**
    a) Explain FOCL Algorithm using prior knowledge to augmented search. **(07)**
    b) Explain K-nearest neighbor learning process. **(07)**