**ACI Assignment 2**

**Question 8 – Bank note data Processing for decision making**

Bank note authentication data

[https://archive.ics.uci.edu/ml/datasets/banknote+authentication#](https://archive.ics.uci.edu/ml/datasets/banknote+authentication)

Download the data set consisting of the actual data and the data set information is given in the webpage.

You are required to do the following:

Question 1: Python

1. Construct a Bayesian Belief Network for the given data.

Use appropriate methods to predict the following:

1. Predict the probability of data having the following values :Variance: 3.6216 , skewness: 8.6661, curtosis : -2.8073 , entropy : -0.44699, and the class is 0.
2. Predict the if the note is genuine or fake with the following attribute values: Variance: -1.8439, skewness: -8.6475, curtosis : 7.6796 , entropy : -0.66682.
3. Infer the probability for the data : with values
4. 0 for all attributes and class 0 and
5. 1 for all the attributes with class 1

Question 2: Prolog

1. Use Any of the decision tree algorithms to build a decision tree for the given data
2. Create rules from the decision tree.
3. Code the rules into a Prolog Knowledge base
4. Get the attribute values from the user and predict if the note is genuine or fake.

Note: Do necessary data pre-processing as required by the implementation.