Python Programming with Data Sciences

Department of Mathematics (Test # 2) **University of Karachi**

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Note: All questions carry equal marks   **Total Marks: 10**

Question 1:

Table 1 shows a confusion matrix for a classification problem. Calculate the following measures:

	Predicted -	Predicted +
True -	538	20
True +	43	320

(a) What is Confusion Matrix? Describe it in a single line?
(b) What is the Inferential Statistics? Define Inter-Quartile Range with one example.
(c) Calculate the Accuracy, Error rate, Precision and Recall. Comment on the quality or performance of the model
(d) Name the Python Library to find the mode of a randomly generated dataset.

Question 2:

Draw a decision tree by selecting the root node. Make the necessary calculation of Information Gain and Entropy as well.

Weather	Temperature	Humidity	Wind	Golf Play
Fine	Hot	High	None	No
Fine	Hot	High	Few	No
Cloud	Hot	High	None	Yes
Rain	Warm	High	None	Yes
Rain	Cold	Medium	None	Yes
Rain	Cold	Medium	Few	No
Cloud	Cold	Medium	Few	Yes
Fine	Warm	High	None	No
Fine	Cold	Medium	None	Yes
Rain	Warm	Medium	None	Yes
Fine	Warm	Medium	Few	Yes
Cloud	Warm	High	Few	Yes
Cloud	Hot	Medium	None	Yes
Rain	Warm	High	Few	No