National University of Computer and Emerging Sciences, Lahore Campus

Course:	Artificial Intelligence	Course Code:	AI-2002
Program:	BS(Computer Science)	Semester:	Spring 2024
Duration:	30 Minutes	Total Marks:	10
Paper Date:	07-May-24	Weight	3.33%
Section:	D/F/F	Page(s):	2
Exam:	Quiz 4A	Roll No.	

Instruction/Notes:
* Provide your solution on this sheet. You may use an extra page for rough work.

Problem#1 (CLO-4)   **10 Points**

A product company receives 6% of all the product reviews as negative feedback. The sentiment classifier correctly detects 80% of the negative reviews. It also detects 25% of the positive reviews as negative.

a- Suppose there are total 800 reviews. How many are positive and how many are negative in actual? **2 marks**

Actual Negative = 6% of 800 = 48

Actual Positive = 800-48 = 752

b- Fill in the following confusion matrix for the 800 products using information given above. **2 marks**

	Predicted Positive	Predicted Negative
Actual Positive	564	188
Actual Negative	9.6	38.4

c- Compute Accuracy, precision and recall **3 marks**

Accuracy = 564+38.4/800 = 75.3%

Precision = 0.983

Recall = 0.75

d- Comment on the model performance based on your scores in part (c) **3 marks**

Result indicates that model is able to predict positive reviews correctly but it is unable to detect all positive reviews and predicting them as negative hence recall is only 75%. So, model is mainly struggling with the negative class.