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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **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.

1. 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

1. 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 |

1. Compute Accuracy, precision and recall **3 marks**

Accuracy = 564+38.4/800 = 75.3%

Precision = 0.983

Recall = 0.75

1. 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.