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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | | |
| final design | **Course:** | **Data Mining** | **Course Code:** | **DS3002** | |
| **Program:** | **BS (Data Science)** | **Semester:** | **Fall 2025** | |
| **Date:** |  | **Total Marks:** | **10** | |
|  |  | **Max. Time:** | **15 min.** | |
| **Section:** | **BDS-6A** | **Name:** |  | |
| **Quiz 3 B:** |  | **Roll No.** |  | |
| \* | | | | |

**Data**

X1 x2 x3 y

0 1 1 0

0 1 1 0

1 0 1 0

1 1 0 0

0 0 1 1

0 1 0 1

1 0 0 1

1 0 0 1

Q1: Write down the Probabilities used by the naïve Bayes Classifier (7)

P(y=1)

P(x1=1|y=1)

P(x1=0|y=1)

P(x2=1|y=1)

P(x2=0|y=1)

P(x3=1|y=1)

P(x3=0|y=1)

Q2 Using Your Naïve Bayes Model Compute (4)

P(y=1|x1=0, x2=0, x3=0)

Q3 Compute the Probabilities p(x1=0, x2=0, x3=0|y=1) for a joint Bayes model trained on the same data (4)