Name → Piyush Gupta
Scholar no → 21111 2019
Section - CSE 1

Date __/__/__
Page

Machine Learning

Q1)

→ The size of the hypothesis space for a binary classifier with 'n' ternary features is 3^n as each feature can take one of three values (ternary) and there are 'n' features

Q2

→ The probability that the student answers correctly given that they knew the answer is $\frac{p}{p + q(1-p)}$.
This is derived from the conditional probability formula

$$P(\text{knows the answer} \mid \text{answers correctly}) = \frac{P(\text{answers correctly} \mid \text{knows the ans}) \cdot P(\text{knows the ans})}{P(\text{answers correctly})}$$

$$= \frac{p}{p + q(1-p)}$$

$$\text{Ans} - \frac{p}{p + q(1-p)}$$