1) No of unique words = 14

No of words in class A = 15

" " " " " B = 11

$P(A) = \dfrac{5}{10} = \dfrac{1}{2}$

$P(B) = \dfrac{5}{10} = \dfrac{1}{2}$

2) Test Data 1 :- Object Recognition Model

$P(Object/A) = \dfrac{(0+1)}{(15+14)} = \dfrac{1}{29}$

$P(Recognition/A) = \dfrac{0+1}{15+14} = \dfrac{1}{29}$

$P(Model/A) = \dfrac{4+1}{15+14} = \dfrac{5}{29}$

$P(Object/B) = \dfrac{(2+1)}{15+14} = \dfrac{3}{25}$

$P(Recognition/B) = \dfrac{(1+1)}{19+14} = \dfrac{2}{25}$

$P(Model/B) = \dfrac{1+1}{15+14} = \dfrac{2}{25}$

$P(A|t_1) = P(A) \times P(Object/A) \times P(Recognition/A) \times P(Model/A)$

$= \dfrac{1}{2} \times \dfrac{1}{29} \times \dfrac{1}{29} \times \dfrac{5}{29} = 0.000102$

$$P(B|t_1) = P(B) \times P(O|B) \times P(Re|B) \times P(M_6|B)$$

$$= \frac{1}{2} \times \frac{3}{25} \times \frac{2}{25} \times \frac{2}{25} = 0.000384$$

• Since, $P(B|t_1) > P(A|t_1)$.

Hence, test case 1 belongs to class B.

⇒ Similary we can find for test case 2.