

AI1110 ASSIGNMENT-5

U.S.M.M TEJA (CS21BTECH11059)

Abstract—This document contains the solution for Assignment 4 (CBSE CLASS 12 CHAPTER 13 QUESTION-7)

QUESTION 7 :

If A and B are events such that $\Pr(A|B) = \Pr(B|A)$, then

- (i) $A \subset B$ but $A \neq B$
- (ii) $A = B$
- (iii) $A \cap B = \phi$
- (iv) $\Pr(A) = \Pr(B)$

Solution : It is given that,

$$\Pr(A|B) = \Pr(B|A) \quad (1)$$

$$\frac{\Pr(A \cap B)}{\Pr(B)} = \frac{\Pr(A \cap B)}{\Pr(A)} \quad (2)$$

$$\implies \Pr(A) = \Pr(B) \quad (3)$$