

AI1110 Assignment 2

Dondapati Chandrahas Reddy

AI21BTECH11010

ICSE Grade 12 2019 paper

I. QUESTION 1 (VII)

Question:

Evaluate:

$$\int \frac{\sec^2 x}{\csc^2 x} dx \quad (1)$$

Solution:

$$\int \frac{\sec^2 x}{\csc^2 x} dx = \int \frac{\frac{1}{\cos^2 x}}{\frac{1}{\sin^2 x}} dx \quad (2)$$

$$= \int \frac{\sin^2 x}{\cos^2 x} dx \quad (3)$$

$$= \int \tan^2 x dx \quad (4)$$

$$= \int \sec^2 x - 1 dx \quad (5)$$

$$= \tan x - x + C \quad (6)$$

(where C is constant of integration)