Using the ICs of basic logic gates, design and implement a 4 to 2 priority encoder with the priority of the input data bits $(D_3D_2D_1D_0)$ as given below.

Problem 4: D_1, D_3, D_0, D_2 (given in order of ascending priority)

Create a PDF containing a hand-written document where you must show the complete truth table with $2^4 = 16$ combinations of the 4 input data bits. Submit the PDF file and the .circ file simulated in Logisim in a single zip file named by your student ID.