Using D flip flops design a counter that counts from zero to one hundred and displays the count value on three seven segment displays. The clock available for this project provides a rising edge once every second. The counter display is to be updated every five seconds, meaning the count will go 0 then 5 then 10 then 15 and so on up to 100 then cycle back to 0. You are allowed to use D flip flops, decoders, multiplexers and any required logic gates in your design. You must design your own seven segment encoder.

Include all truth tables, K-maps and equation used to design your counter.

Include a complete logic diagram of your design.