**Assignment 3**

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A screen shot of a computer screen

AI-generated content may be incorrect.Question 1:

Figure TB Code

A screenshot of a computer

AI-generated content may be incorrect.

Figure DO File

Figure 3 Questa Lint

Question 2:

Write a testbench for question 5 part C in assignment 2. Test the parameterized asynchronous FlipFlop using 2 testbenches, testbench 1 that overrides the design with FF\_TYPE = “DFF” and the testbench 2 overrides parameter with FF\_TYPE = “TFF”.

A screenshot of a computer program

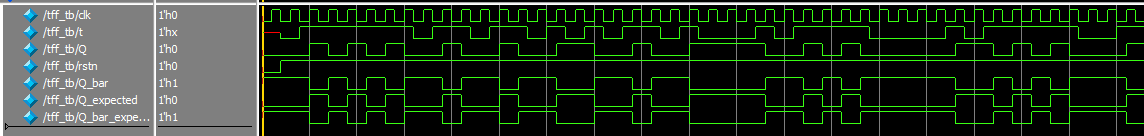
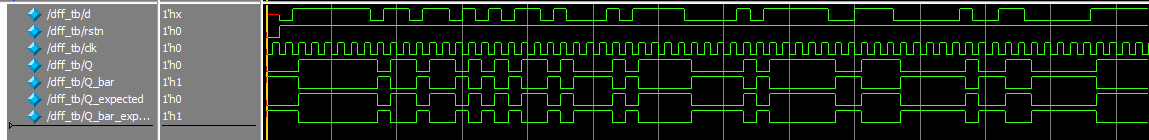
AI-generated content may be incorrect.

Figure DFF TB

A screenshot of a computer program

AI-generated content may be incorrect.

Figure TFF TB

A screenshot of a computer program

AI-generated content may be incorrect.A screenshot of a computer program

AI-generated content may be incorrect.Figure DO Files

Question 3:

A screenshot of a computer program

AI-generated content may be incorrect.A screen shot of a computer program

AI-generated content may be incorrect.Implement BCD up counter (MOD 10 counter), where the counter has 10 states. The counter will divide the clock frequency by 10.

Figure BCD Counter Code

Figure TB Code

A screenshot of a computer program

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Figure DO File

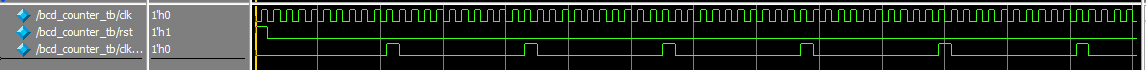
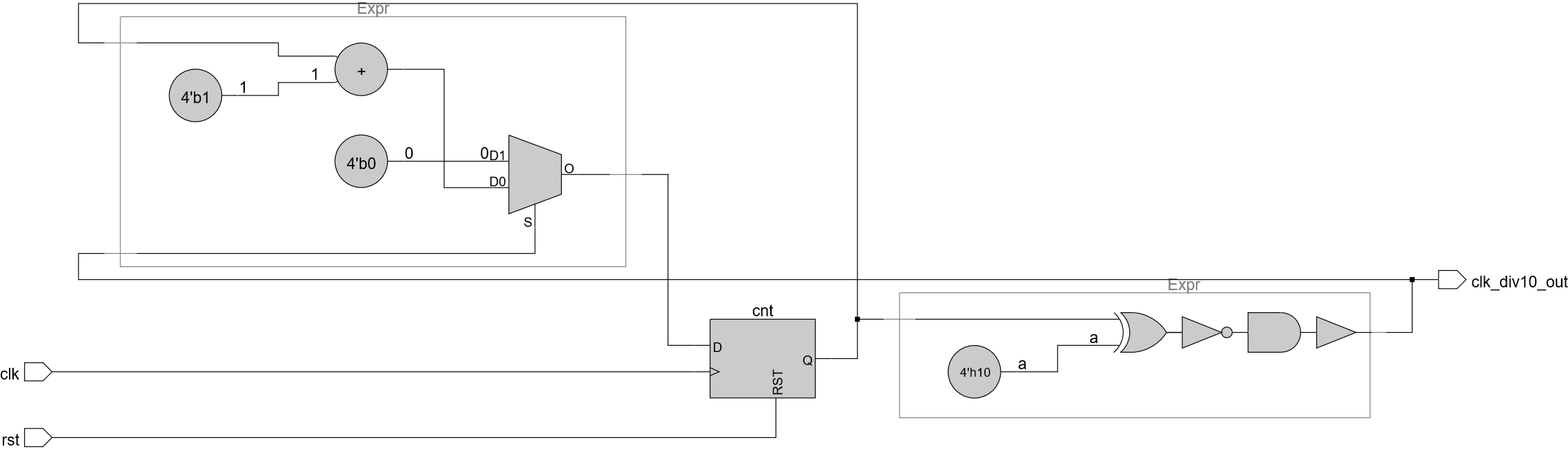


Figure BCD Counter Schematic

Figure Waveform Output

Question 4: Ripple Counter

A computer screen shot of a program code

AI-generated content may be incorrect.

Figure Ripple Counter Code

A screenshot of a computer program

AI-generated content may be incorrect.

Figure Ripple Counter TB

A screenshot of a computer

AI-generated content may be incorrect.

Figure Do File

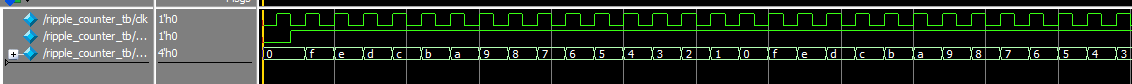


Figure Waveform

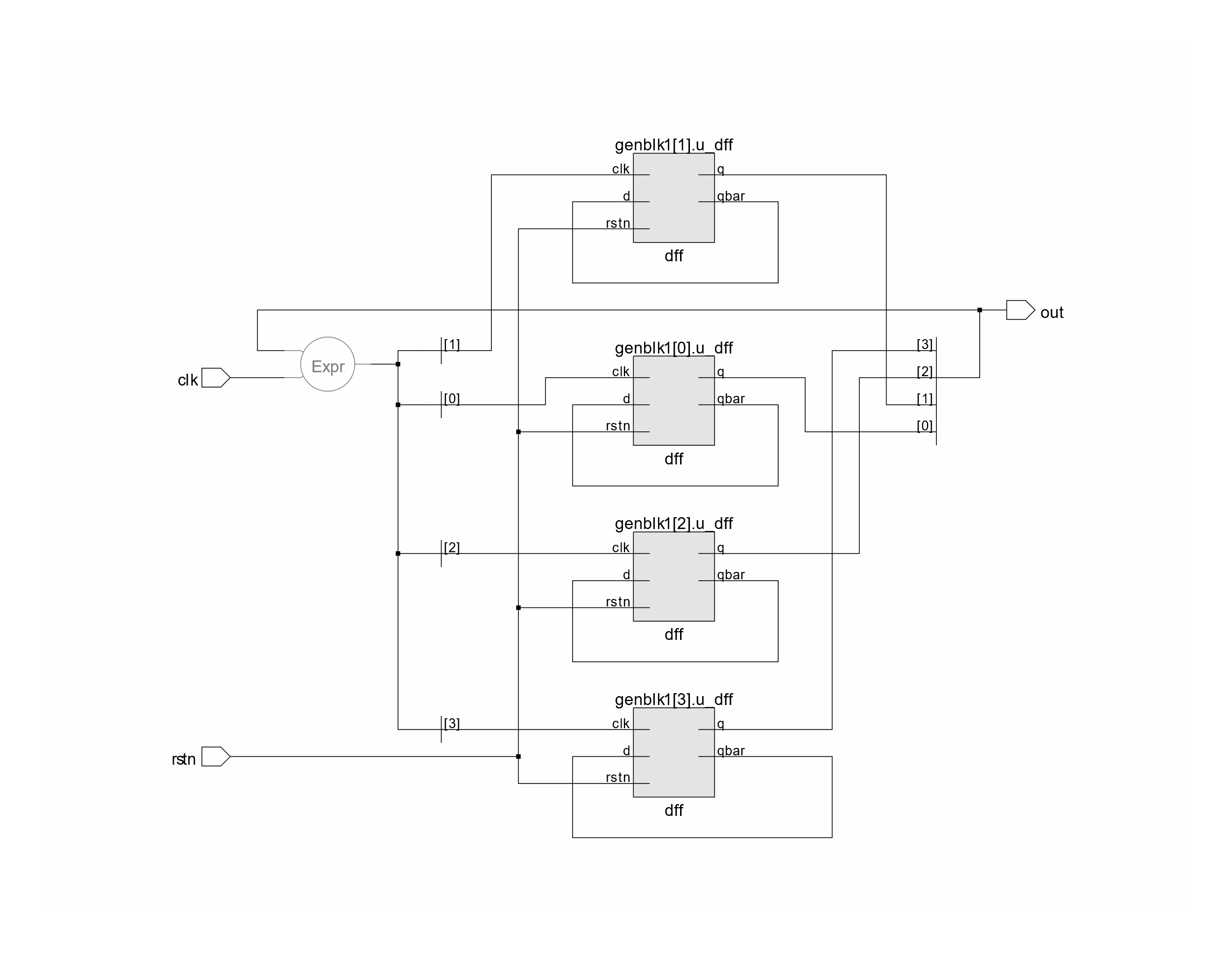


Figure Ripple Counter Schematic

Question 5:



Figure SLE Shift Register Code