

EEE 2243
Digital System Design
Semester II 2011/12

Quiz 2 – 2JKE1

Write the Verilog code for converting D flip-flop to T flip-flop.

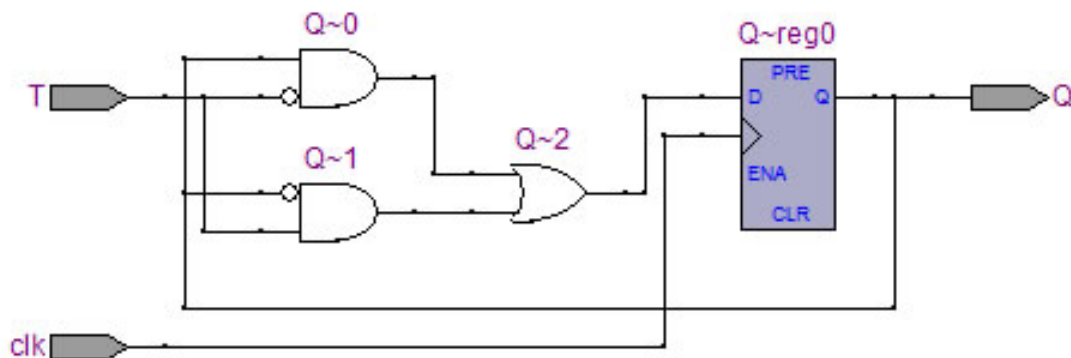
Answer:

Refer to Chapter 3 slide page 24

By Boolean expression:

```
module TFlipFlopBool(clk, T, Q);  
input clk, T;  
output Q;  
reg Q;  
  
always@(posedge clk)  
begin  
    Q <= (~T & Q) | (T & ~Q);  
end  
  
endmodule
```

RTL View:



By behavioral:

```
module TFlipFlopBeha(clk, T, Q);  
  
input clk, T;  
output Q;  
reg Q;  
  
always@(posedge clk)  
begin  
    if (T)  
        Q <= ~Q;  
    else  
        Q <= Q;  
end  
  
endmodule
```

RTL View:

