Module 7: Basic Synchronous Sequential Circuits
Class 34: Serial Adder
iRAT
(4 questions in total)

1. Which of the following statements about adders is incorrect?
   A. With serial adders, the addition of two n-bit numbers are done one bit at a time.
   B. Compared with parallel adders (e.g., ripple-carry adder) presented in Chapter 3 of the textbook, serials adders tend to be more cost-effective.
   C. Compared with parallel adders (e.g., ripple-carry adder) presented in Chapter 3 of the textbook, serials adders tend to be slower.
   D. In a serial adder, shifter registers are used to store the sum of the addition operation only.

2. For the serial adders presented in the Ch. 6.5 of the textbook, how many more states are needed in the Moore-type adder FSM than in the Mealy-type adder FSM?
   A. 1
   B. 2
   C. 3
   D. 4

3. For the serial adders presented in the Ch. 6.5 of the textbook, how many more D flip-flops are needed to realize the Moore-type adder FSM instead of the Mealy-type adder FSM?
   A. 1
   B. 2
   C. 3
   D. 4

4. For the complete circuit for serial adder, shown in Figure 6.50(a) of textbook, what is the role of the counter?
   A. The counter is used to compute the sum of two 8-bit numbers.
   B. The outputs of the counter is used to detect the completion of the add operation and then to stop and disable further changes in the output shift register.
   C. The counter is used to count the number of 1s in the inputs to the serial adder.
   D. The counter is used to detect whether there is overflow in the addition operation.