Assignment 3

Due on 2020-02-19, 23:59 EST.

1) A sequential circuit differs from a combinational circuit in which of the following ways? (3 points)
   - A sequential circuit's output depends not only on the current input, but also on the past inputs.
   - A sequential circuit has one of its output lines as input into the circuit.
   - A sequential circuit can be either combinational or sequential.
   - All of the above

No, the answer is incorrect.

2) The transmission gate has two transistors instead of one because (2 points)
   - The output of a transmission gate is always driven by the input
   - The output of a transmission gate is always driven by the input
   - The output of a transmission gate is always driven by the input
   - The output of a transmission gate is always driven by the input

No, the answer is incorrect.

3) Which of the following is correct about latches and flip-flops? (2 points)
   - Both can be set and reset independently.
   - Both can be set and reset independently.
   - Both can be set and reset independently.
   - Both can be set and reset independently.

Correct.

4) In a the potentiometer, if the potentiometer is not connected to the ground, how many address bits are needed to identify which range is the given address belongs to? (2 points)
   - No, the answer is incorrect.

Correct.

5) To store a new address into PC, writing which of the following values upon mandatory? (2 points)
   - new
   - 0
   - 1
   - 0

Correct.

6) In which of the following options, the instructions in the H8/305A along with their properties are maintained correctly? (2 points)
   - A instruction - starts with 111
   - C instruction - used to perform ALU operation
   - A instruction - loads data from memory
   - C instruction - starts with 011

Correct.

7) The maximum value which can be loaded using an A-instruction is (2 points)
   - $2^{31} - 1$
   - $2^{32} - 1$
   - $2^{32} - 1$
   - $2^{32} - 1$

Correct.

8) The destination inside G2, G3, G4 respectively, are used to write into, respectively. (2 points)
   - A register, D register, B register
   - A register, D register, B register
   - A register, D register, B register
   - A register, D register, memory

Correct.

9) An assembler converter (2 points)
   - H8/305A instruction to binary
   - C program to assembly
   - C program to H8/305A, instruction
   - H8/305A instruction to binary

Correct.

10) Which of the following is correct about memory mapped I/O? (2 points)
    - Drawing lines to screen can be achieved by writing to memory associated with SCREEN.
    - Reading from keyboard can be achieved by reading from memory associated with KB.
    - Reading from keyboard can be achieved by reading from memory associated with KB.
    - Drawing lines from processor can be achieved by reading from memory associated with SCREEN.

Correct.