Week 7 Assignment 7

1. A potential divider differs from a fractional divider in that
   a. the circuit output depends only on the present inputs.
   b. the output voltage depends on the present state and the present inputs.
   c. the output voltage depends on the present state and the present inputs.
   d. the output depends only on the present state and not on the present inputs.

2. Here is a clock difference from flip-flop:
   a. 180° Phase difference between the input clock and the output clock
   b. 90° Phase difference between the input clock and the output clock
   c. 0° Phase difference between the input clock and the output clock
   d. 180° Phase difference between the input clock and the output clock

3. There are two conditions necessary to be followed for a flip-flop:
   a. the value of input is ‘1’ at the present input
   b. the value of input is ‘0’ at the present input
   c. the value of input is ‘1’ at the present input
   d. the value of input is ‘0’ at the present input

4. The frequency of a clock is 1.4 MHz, and the other period is 15 nanoseconds. The 15th period of the clock signal is ______ nanoseconds.

5. In the following table, what is the output value for Flip-Flop 1 given the input values?
   a. 0, 1, 1, 0
   b. 1, 0, 1, 0
   c. 1, 0, 1, 0
   d. 0, 1, 1, 0

6. To construct a 4-level master slave flip-flop, we need _______ NAND/NOR gates.

7. To study the frequency of a rectangular periodic waveform by L, we use:
   a. 0.45 f flip-flop
   b. 0.25 f flip-flop
   c. 0.5 f flip-flop
   d. 0.25 f flip-flop

8. What is a setup time of flip-flop?
   a. Maximum amount of time one input to the flip-flop may be stable before the other input edge arrives
   b. Maximum amount of time the input of a flip-flop may be stable after the other input edge arrives
   c. Maximum amount of time the input to the flip-flop must reach its final state before the clock edge arrives
   d. None of these

9. For the following circuit, if F = 1 nanoseconds and K = 1 nanosecond, and F = 1 nanoseconds, what is the maximum frequency with which the circuit will oscillate?

10. What is meant by basic latch in a combinational circuit in response to strobe signals?
    a. There is a single transmission in the output, but the internal and
      final states remain unchanged.
    b. There is a setup transmission in the output, but the internal and
      final states remain unchanged.
    c. There is a single transmission in the output, now the internal and
      final states remain unchanged.
    d. None of these