



# ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



## WORKSHEET -24

### Topic – Ring Counter

Subject: COMPUTER SCIENCE

Class - 12

F.M:15

Chapter: Sequential Logic Circuits

Date: 29/06/2020

### Choose the correct answer for each question:

[15 X 1 = 15]

1. Ring counter is an example of \_\_\_\_\_.
  - a) Synchronous counters
  - b) Asynchronous counters
  - c) True binary counters
  - d) Synchronous and true binary counters
2. A ring counter is a special type of application of the \_\_\_\_\_ Shift register.
  - a) Parallel-in Parallel-out
  - b) Parallel-in Serial-out
  - c) Serial-in Serial-out
  - d) Serial-in Parallel-out
3. Which among the following is correct?
  - a) No. of states in Ring counter > No. of flip-flop used
  - b) No. of states in Ring counter = No. of flip-flop used
  - c) No. of states in Ring counter < No. of flip-flop used
  - d) All of these
4. What is the difference between a shift register and a ring counter?
  - a) There is no difference
  - b) last flip flop outcome is taken as the output in the shift register
  - c) last flip flop outcome is passed to the first flip flop as an input
  - d) both (a) and (b)
5. The output of the first flip flop is used to form the ring in the ring counter and referred to as:
  - a) Clock pulse
  - b) Overriding input
  - c) Preset 1
  - d) None of these
6. In a 4-bit ring counter, how many states are possible?
  - a) one
  - b) two
  - c) four
  - d) eight
7. What is the preset condition for a ring shift counter?
  - a) All FFs set to 1
  - b) All FFs cleared to 0

- c) A single 0, the rest 1
  - d) A single 1, the rest 0
8. If a 10-bit ring counter has an initial state 1101000000, what is the state after the second clock pulse?
- a) 1101000000
  - b) 0011010000
  - c) 1100000000
  - d) 0000000000
9. The outcome of the \_\_\_\_\_ flip-flop is passed to the \_\_\_\_\_ flip-flop as an input.
- a) last, last
  - b) first, first
  - c) last, first
  - d) none of these
10. The ring counter circulates the \_\_\_\_\_ bit(s) around the ring.
- a) one
  - b) two
  - c) four
  - d) eight
11. The Overriding input is used as \_\_\_\_\_ and \_\_\_\_\_.
- a) clear, set
  - b) clear, pre-set
  - c) set, reset
  - d) clear, clock
12. The Pre-set 1 is generated when:
- a) ORI is set to low, clk doesn't care
  - b) ORI is set to high, low clock pulse signal is passed as the negative clock edge triggered
  - c) both (a) and (b)
  - d) none of these
13. We can convert a standard shift register circuit into a ring counter by:
- a) adding an extra flip-flop
  - b) looping the output back to the input
  - c) both (a) and (b)
  - d) none of these
14. A 4-bit ring counter is also known as:
- a) mod-3 counter
  - b) mod-4 counter
  - c) mod-5 counter
  - d) mod-8 counter
15. A mod-8 ring counter requires \_\_\_\_\_ flip-flops.
- a) two
  - b) four
  - c) eight
  - d) sixteen