1. Design an 8-bit counter using two 74193s with provision to load new value (parallel load) and counting in both directions (up and down).
2. Design an 8-bit universal shift register using two 74194s with the following specification.

|  |  |  |
| --- | --- | --- |
| **S1** | **S0** | **Operation** |
| 0 | 0 | Parallel Load |
| 0 | 1 | Shift Right |
| 1 | 0 | Shift Left |
| 1 | 1 | Hold |

1. Design an 8-bit Ring counter with a reset signal. (Reset will set next state to T1 – initial state).
2. Design the subcircuit for an 8-bit register with the following specifications (Active low signals must be input as active low to the subcircuit)-
3. Design the subcircuit for an 8-bit register with the following specifications (Active low signals must be input as active low to the subcircuit)-
4. Design the transition logic using sequencer-decoder method for the following state diagram, use logic states for the condition signals-   
     
     
      
     
      
     
     
     
    Pq = 1   
     
    Pq = 0

1. Design the transition logic using sequencer-decoder method for the following state diagram, use logicstates for the condition signals-

As = 1 As = 0