



## 1

## Parallel To Serial

## Question

## Solution

## Video

## Discussion

A parallel-in serial-out circuit is used to generate a serial output from a parallel input. The circuit takes in  
Design a parameterized parallel-to-serial convertor as per the given interface requirements. All the flop

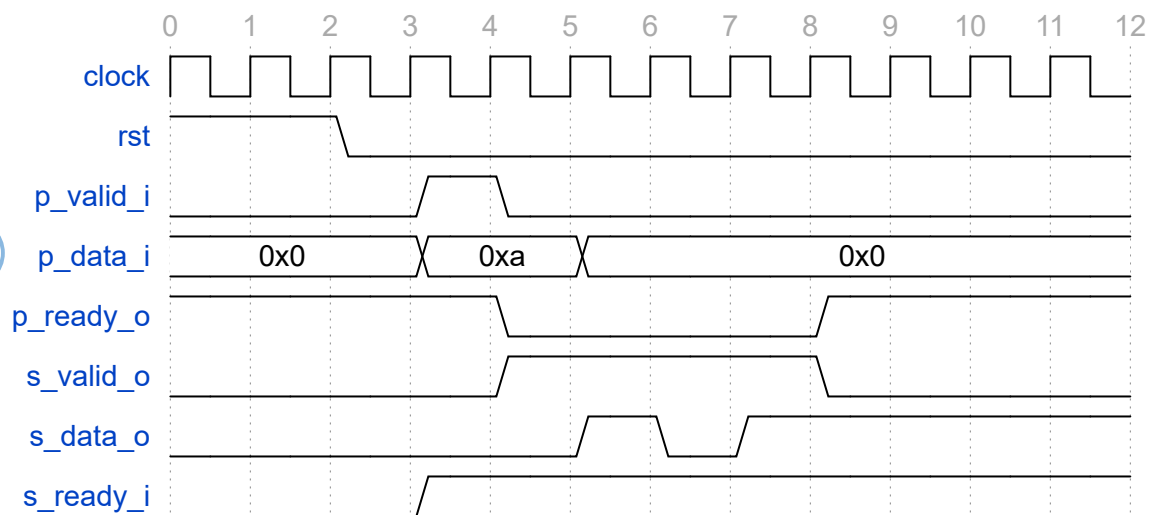
## Interface Definition

p\_valid\_i : Parallel valid input to the convertor p\_data\_i : N-bit parallel data input to the convertor p\_  
s\_valid\_o : Serial valid output from the convertor s\_data\_o : Serial data output from the convertor s\_

## Interface Requirements

- Both parallel and serial interfaces follow the standard valid-ready interface
- The valid should remain asserted until ready is seen
- The transfer completes when both valid and ready are high on a cycle
- The data should remain stable until the transfer completes
- Back-to-back transfers are allowed
- The serial output data should remain stable after the last transfer completes

## Sample Simulation



## Explanation

- Cycle T1 : Reset is asserted