

Experiment # 5  
Generation of control signals for serial  
operation & serial transfer

**1-Objective:**

The aim of this experiment is to generate control signals for serial operation and use them in serial addition .

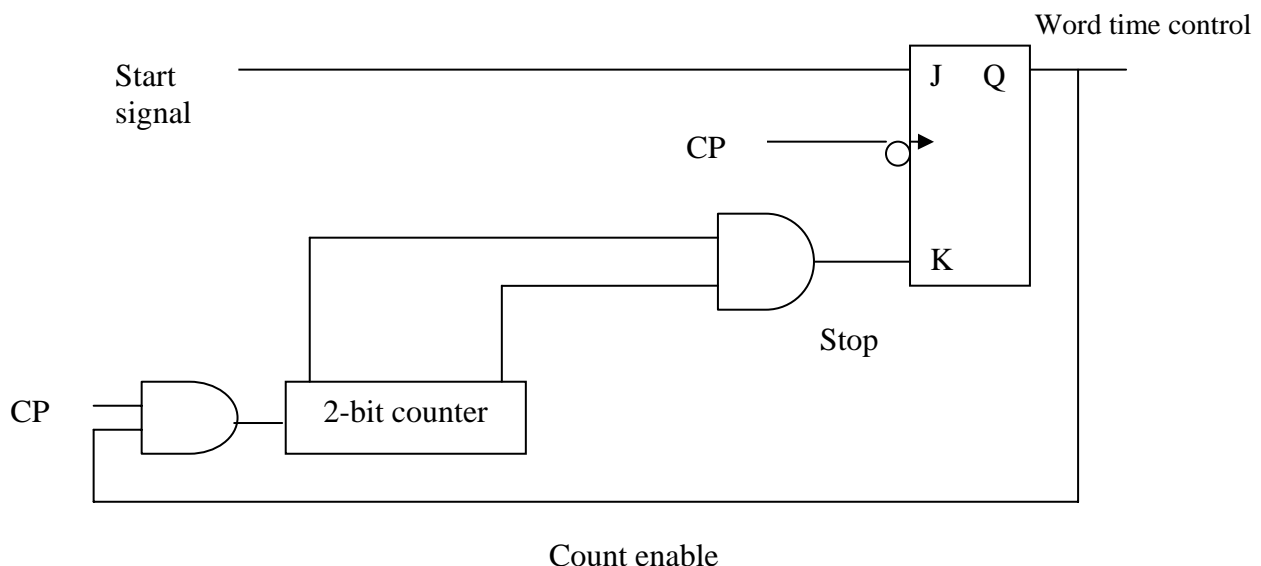
**2- Equipment:**

Type of IC	Description
7490	Decade counter
7473	JK flip flop
7408	AND gate
74194	8 bit shift register

**3- Procedure:**

**Part A: Generation of control signals for serial operation**

1- The function diagram is following :



2- Derive the wiring diagram.

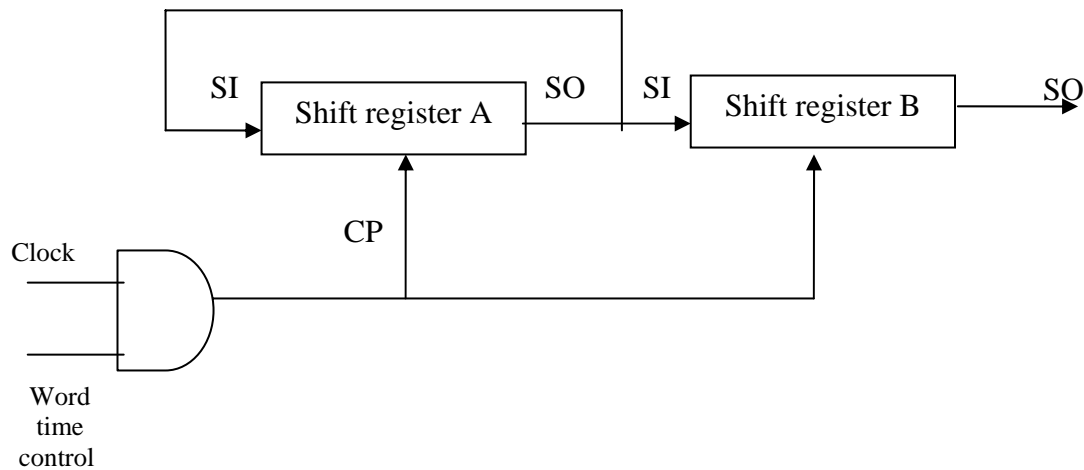
3- Connect the circuit given by the function diagram according to the derived wiring diagram.

4- Test the operation of the circuit.

5- Draw the circuit time waveforms.

### Part B: Serial transfer

1- The function diagram is following :



2- Derive the wiring diagram.

3- Connect the circuit given by the function diagram according to the derived wiring diagram.

4- Test the operation of the circuit.

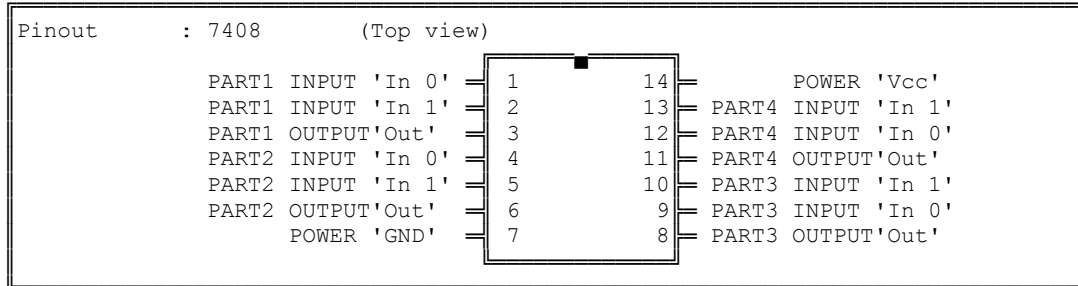
### **6- Conclusions and Exercises**

1- If registers A and B have 8 bits , generate a control signal for serial operation ?

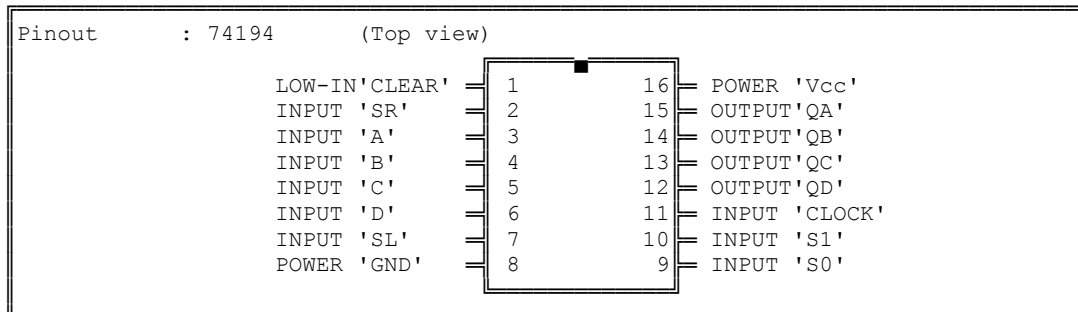
2- Write your Conclusions about the experiment.

## Data sheet

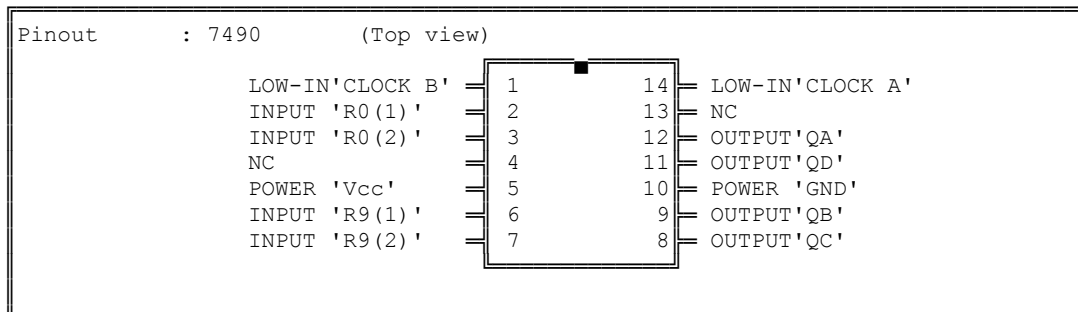
Function :        2-input-AND Gate



Function :        4 Bit universal bidirectional shift register



Function :        Decade counter



Function :        J-K FLIPFLOP

