CLASS: S.E. E &TC **SUBJECT: DC**

EXPT. NO.: 5 **DATE: 05/12/2020**

ROLL NO: 22119

TITLE : **Study of Shift Register**

PRE-REQUISITES FOR EXPT. :

Definition of register, Implementation and operation of Shift Register using 74LS175.
Different modes of Shift-Register.
Application of 74LS175.
(Refer data-Sheet)

OBJECTIVE :

1. Functional verification of shift register 74LS175
2. Design and Implement 4-bit left shift register using D-Flipflop (Use left shift).
3. Design and Implement 4-bit right shift register using D-Flipflop (Use right shift).
4. Design and Implement 4-bit Serial in parallel Out(SIPO) shift register using D-Flipflop
5. Design and Implement 4-bit Parallel in Parallel Out(PIPO) shift register using D-Flipflop

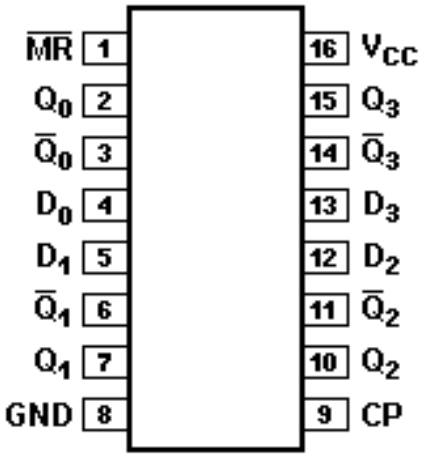
APPARATUS :

Digital-Board, GP-4Patch-Cords, IC- 74LS175

THEORY :

Register is a sequential logic device, which can be used to store the number of bits. Register whose internal bits can be shifted towards right and left is called as shift register. We can use D flipflop as Shift register for left shifting ,right shifting ,PIPO,SIPO.

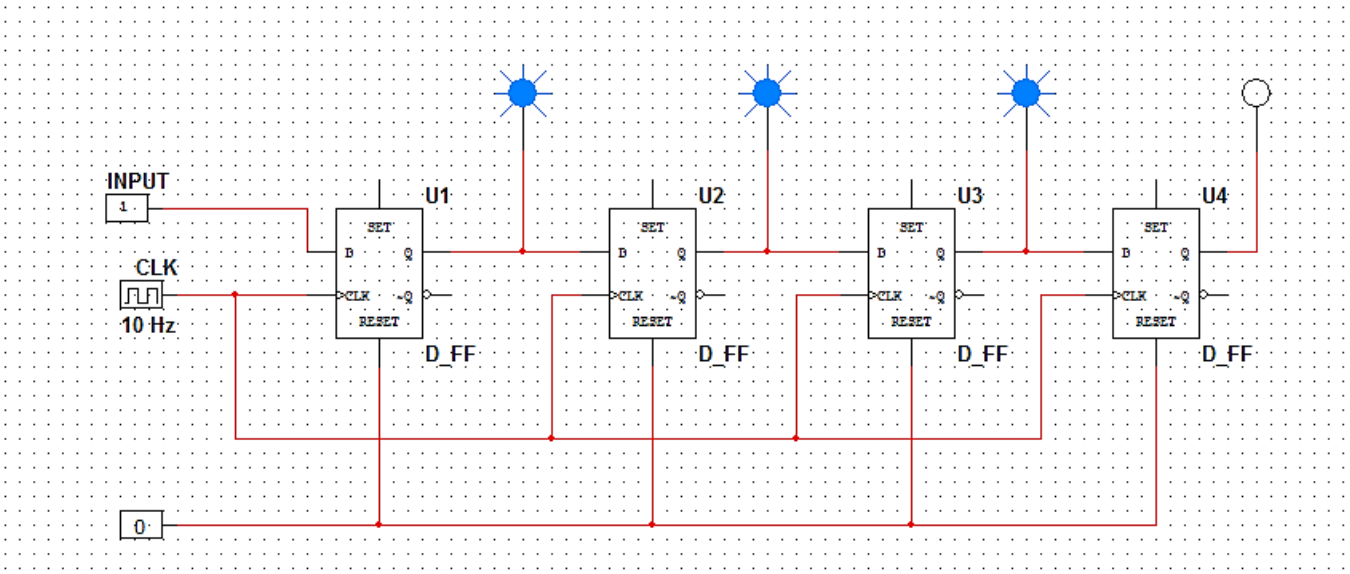
PIN Diagram:



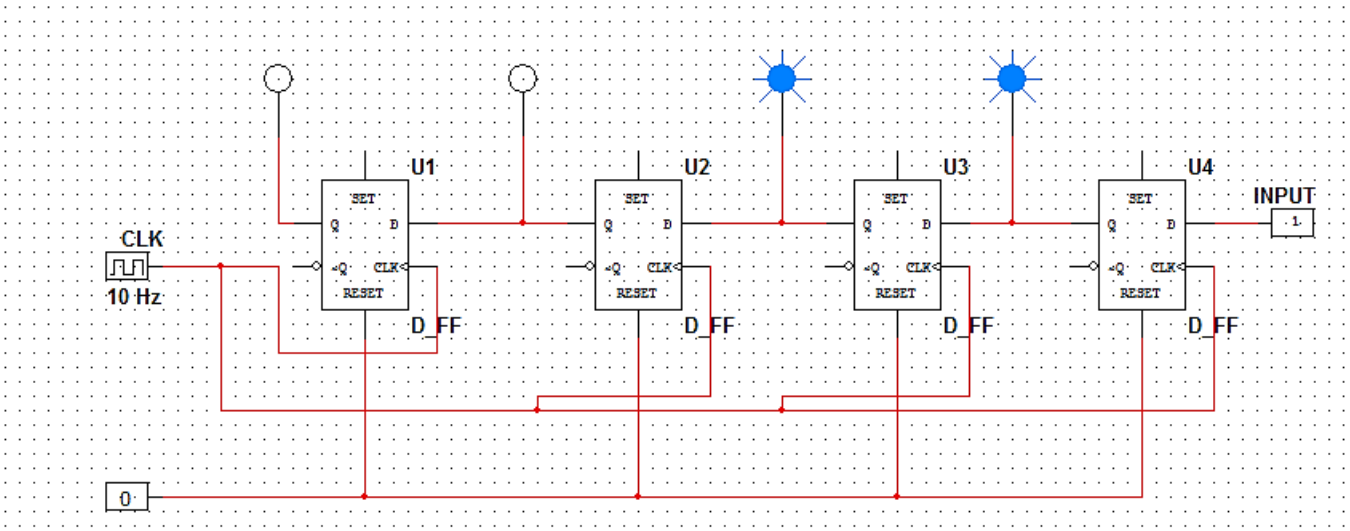
PROCEDURE :

1. Make the connections and verify IC truth table.
2. Make the connections as per the Logic circuit of D-Flipflop Right shift
3. Make the connections as per the Logic circuit of D-Flipflop left shift.
4. Make the connections as per the Logic circuit of SIPO.
5. Make the connections as per the Logic circuit of PIPO.
6. Draw all timing diagrams.

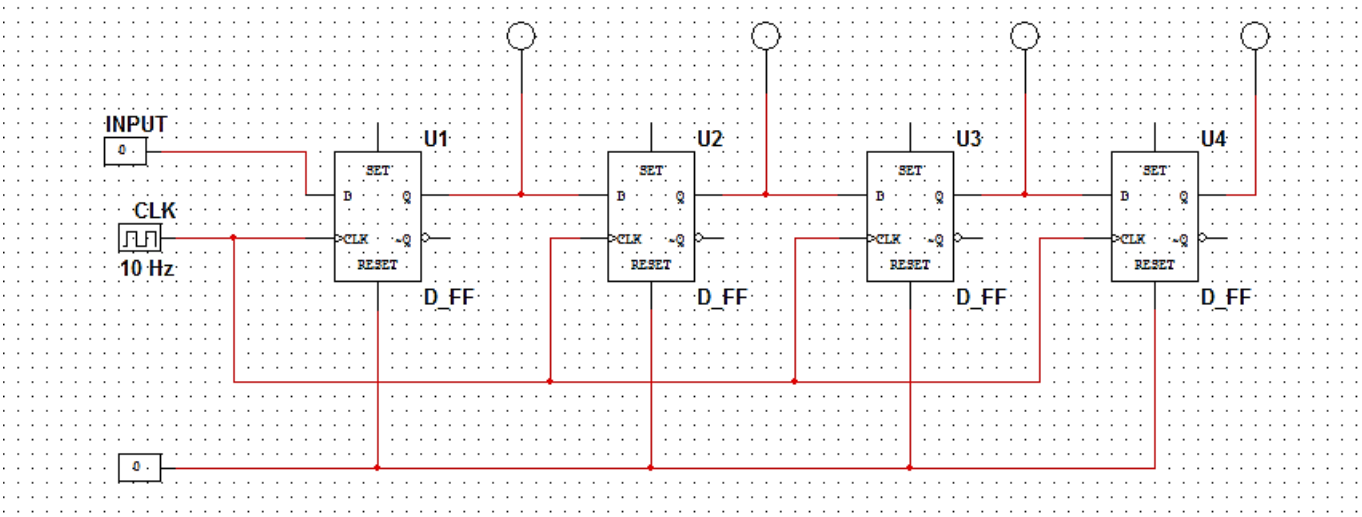
1) Right shift using D-Flipflop: -



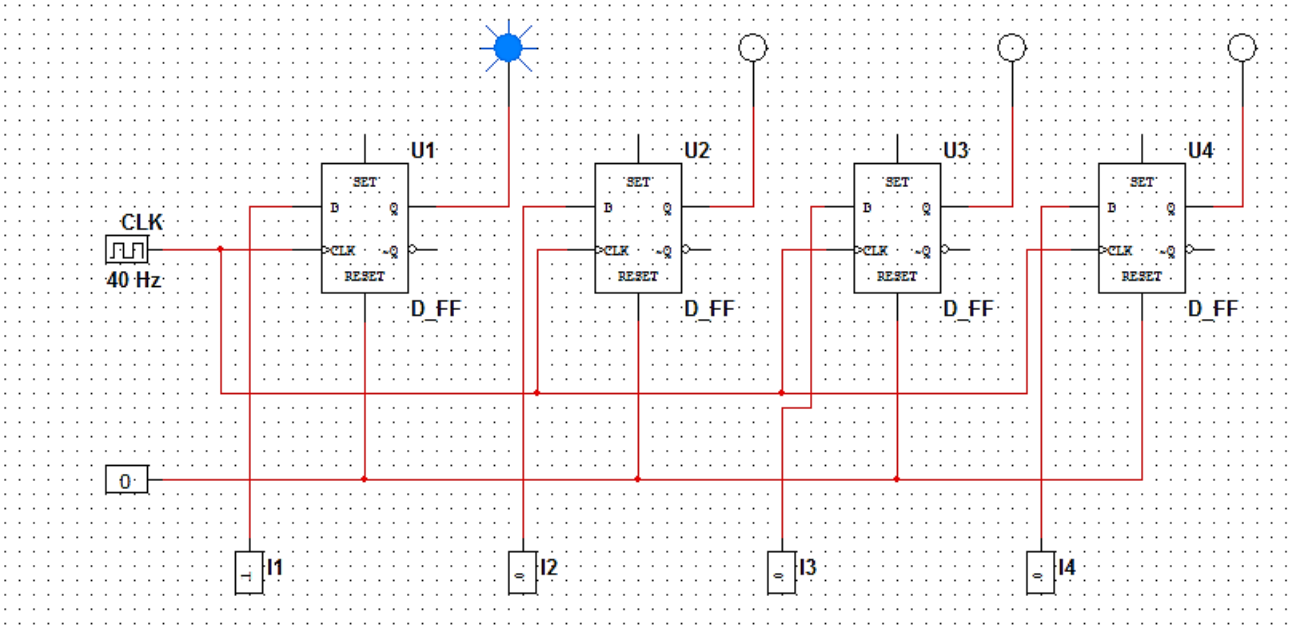
2) Left shift using D-Flipflop: -



3) SIPO using D-Flipflop: -



4) PIPO using D-Flipflop: -



CONCLUSION:

1. Designed and Implemented 4-bit left shift register using D-Flipflop (Use left shift).
2. Designed and Implemented 4-bit right shift register using D-Flipflop (Use right shift).
3. Designed and Implemented 4-bit Serial in parallel Out(SIPO) shift register using D-Flipflop
4. Designed and Implemented 4-bit Parallel in Parallel Out(PIPO) shift register using D-Flipflop

REFFRENCE:

1) : R.P. Jain , "Modern digital electronics" , 3rd edition

2) : A. Anand Kumar, "Fundamentals of digital circuits" 1st edition

Subject teacher Sign with Date Remark