NAME * Muhammad Ilyas

ID-No * 15392

Degree * B.S (software Engr)

Assignment * 7

Teacher * Sir-M. Amin

Q1:- What is a register?

Ans:- A register is an electronic device consists of series of flip-flop to store data bits and moving the data bits. The length of the stored binary word depend on the number of flip-flop that make of the register.

Q2:- What is the storge of a register that can retain one byte of data?

Ans:-

The storage capacity of register that can retain one byte of data is 8 bits. This particular register will be an 8 stage shift register.

Q3:- What does the "shift capacity" of a register mean?

Ans:-

The shift capacity of a register permits to store and move data from an stage to another within, into, or out of register.

Q4:- The sequence 1011 is applied to the input of 4-bit shift register that is initially cleared. what is the state of the shift register after three clock pulse?

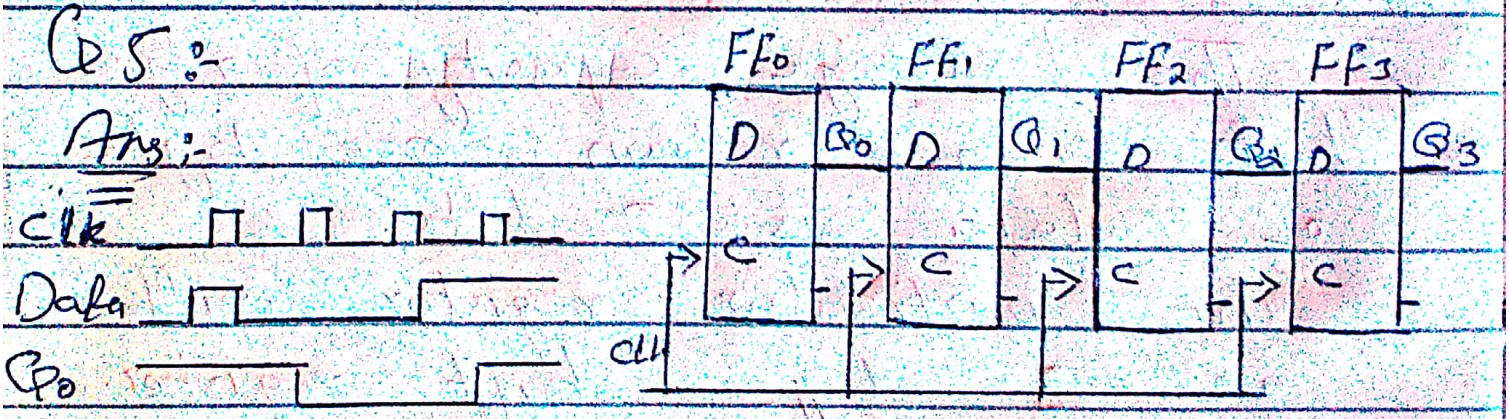
Ans:-

Since the shift register is initially cleared.

initially	0 0 0 0
clk_1	1 0 0 0
clk_2	1 1 0 0
clk_3	0 1 1 0

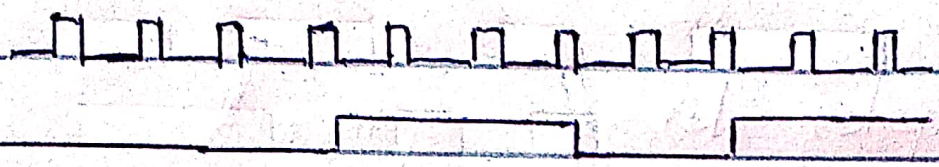
Q5:-

Ans:-



Q6:- What is the state of register in figure 02 after each clock pulse if it starts in the 110001110000 state?

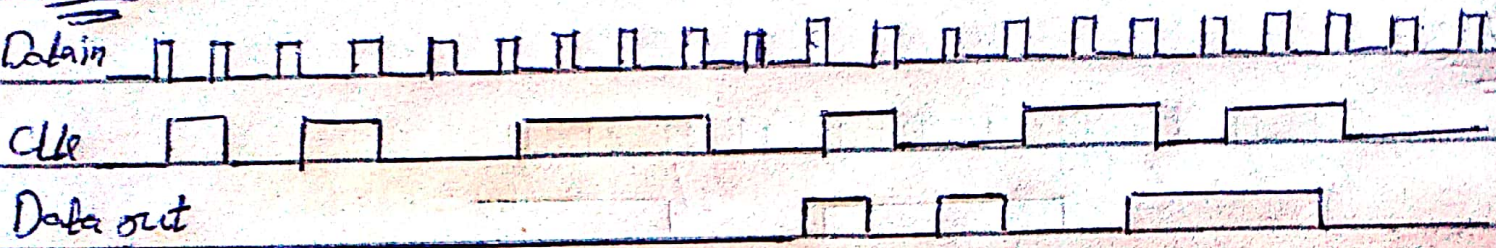
Ans:-



Initially	1 1 0 0 0 1 1 1 0 0 0 0	Data →	D SR Sout → Dout
Clk1	0 1 1 0 0 0 1 1 1 0 0 0	Clk →	> C
Clk2	0 0 1 1 0 0 0 1 1 1 0 0		
Clk3	0 0 0 1 1 0 0 0 1 1 1 0		
Clk4	0 0 0 0 1 1 0 0 0 1 1 1		
Clk5	1 0 0 0 0 1 1 0 0 0 1 1		
Clk6	1 1 0 0 0 0 1 1 0 0 0 1		
Clk7	1 1 1 0 0 0 0 1 1 0 0 0		
Clk8	0 1 1 1 0 0 0 0 1 1 0 0		
Clk9	0 0 1 1 1 0 0 0 0 1 0 0		
Clk10	0 0 0 1 1 1 0 0 0 0 1 1		
Clk11	1 0 0 0 1 1 1 0 0 0 0 1		
Clk12	1 1 0 0 0 1 1 1 0 0 0 0		
Clk13	0 1 1 0 0 0 1 1 1 0 0 0		

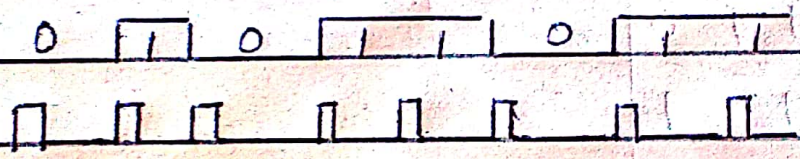
Q 7 :-

Ans :-



Q 8 :-

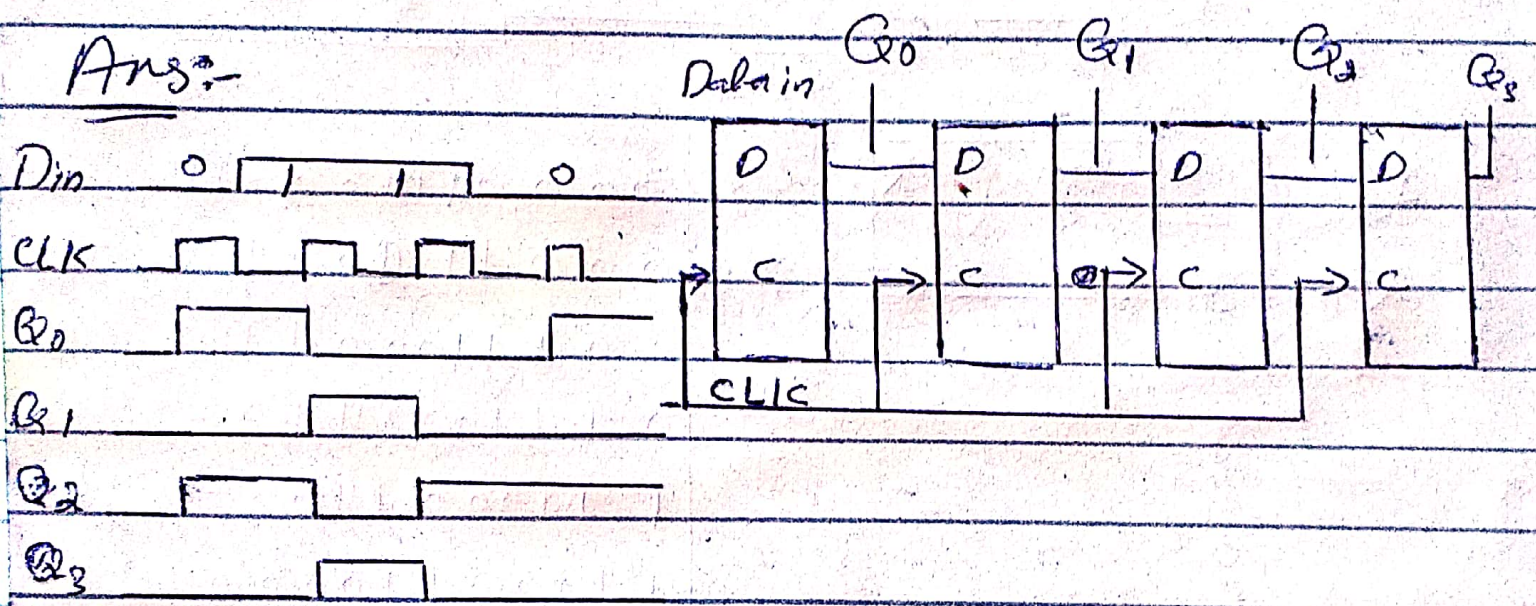
Ans :-



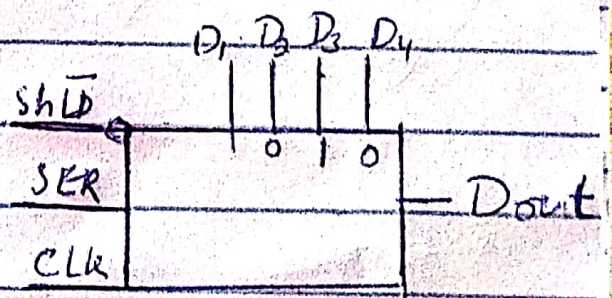
This data bits stored are $(11\ 0\ 11\ 0\ 1\ 0)_2$

Q9 :- Show a complete timing diagram including the parellel outputs for the shift register in figure 05. use the waveforms in figure 05 with the register initially clear.

Ans :-



Q10 :-



Ans :-