National Institute of Technology, Calicut
Department of Physics
PH 2007D Digital Electronics
Quiz (July 2020)

Maximum Duration: 2 hrs   **Maximum marks: 20**

INSTRUCTIONS:

Answer all the questions

Upload the answer sheets before 4 pm in PDF format

1. Pick the statement not applicable to asynchronous counters from the choices given below?

   (1 mark)

   a. Asynchronous counters are called ripple counters
   b. Complex,requires lot hardware
   c. Straight forward operation and can be used for measuring time and frequecy
   d. have speed limitation

   A). a only
   B). b only
   C). a, b & d
   D). a,c,&d
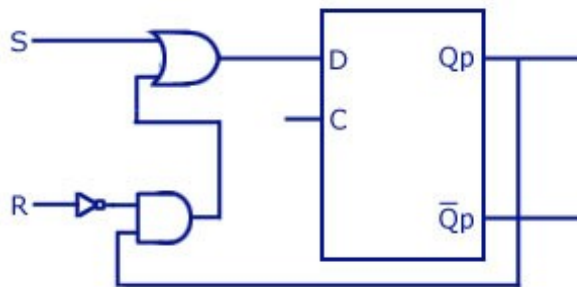
2. Idenitfy the figure given below?

   (1 mark)

fig:1

3. From the truth table, draw the timing diagram waveforms and find five facts that can interpret about the system it represents?

(3 marks)

Clock transitions	C	B	A	State or Count
----	0	0	0	0
↓ 1	0	0	1	1
↓ 2	0	1	0	2
↓ 3	0	1	1	3
↓ 4	1	0	0	4
↓ 5	1	0	1	5
↓ 6	1	1	0	6
↓ 7	1	1	1	7
↓ 8	0	0	0	0

Table:1

4. . Desirable features of data converter that can be used to design a multiple key press detector circuit are given below. Identify and explain the converter circuit?

(4 mark)

        1. low noise
        2. current operating device
        3. two resistors per bit
        4. upto 18 bits should be available

5. Show the progression of each bit storing serially in and shifting serially out for the given data **1011** with different diagrams and explain?
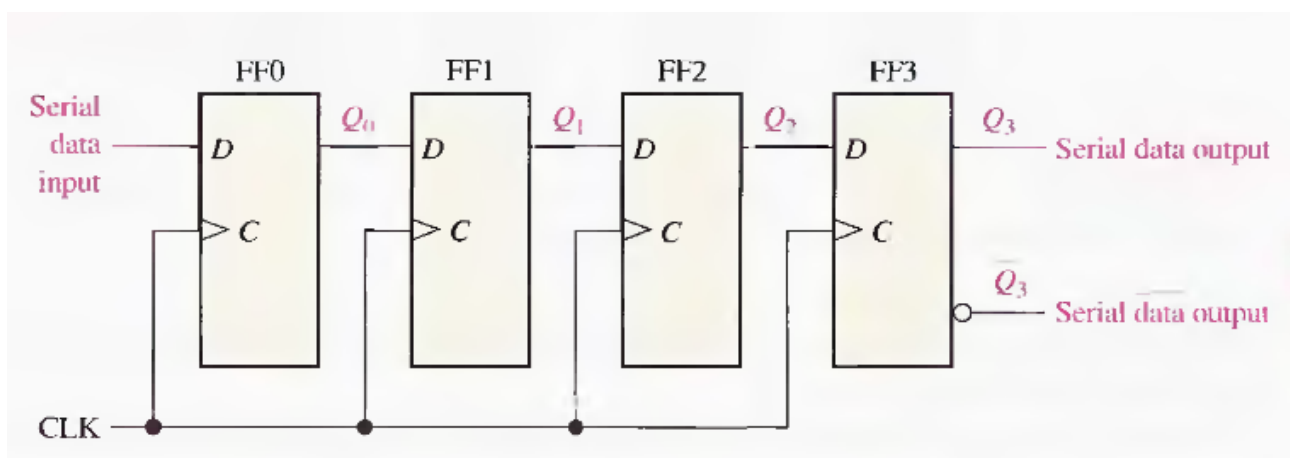
(4 marks)

fig:2

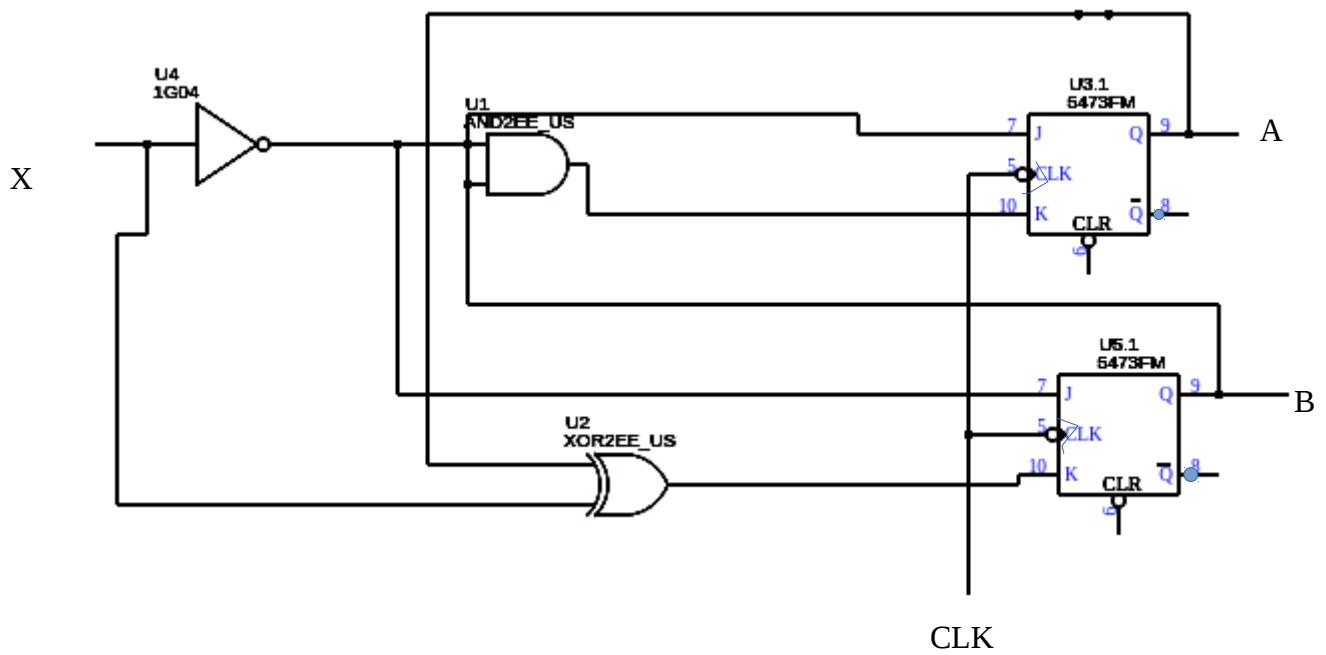**6**. Analyze and explain the sequential circuit given below?

(7 marks)

fig:3