

Course Title: Electrical Science-II/Basic Electronics Devices and Circuits
/Electrical Circuit Analysis
Course Code: 15B11EC211/10B11EC211/10B11EC111

Max Marks: 20

Max Time: 1 Hour

Note: All questions are compulsory.

- Q1(a) 4-bit 2's complement representation of a decimal number is 1000. The number is.....
- (b) How many entries will be in the truth table of a 3 input NAND Gate?
- (c) The 9's complement of 723 with radix 8 is.....
- (d) Find the decimal value of $(432)_8$
- (e) A digital circuit that can store one bit is a..... (1*5marks)
- Q2 Using K-map minimize the function $f(A,B,C,D)=\sum m(2,3,8,10,11,12,14,15)$ and realize (7 marks)
using (a) NAND gates only (b) 8X1 MUX.
- Q3 Find the logic function 'F' realized by the circuit shown in Figure 1? (2 marks)
- Q4 Realize the logic expression $Y=ABC'+A'CD$ using 4:16 decoder and basic gate? (3 marks)
- Q5 Consider the J-K flip flop shown in Figure 2. Assume that the flip flop is initially reset. Draw the output waveform at Q. (3 marks)

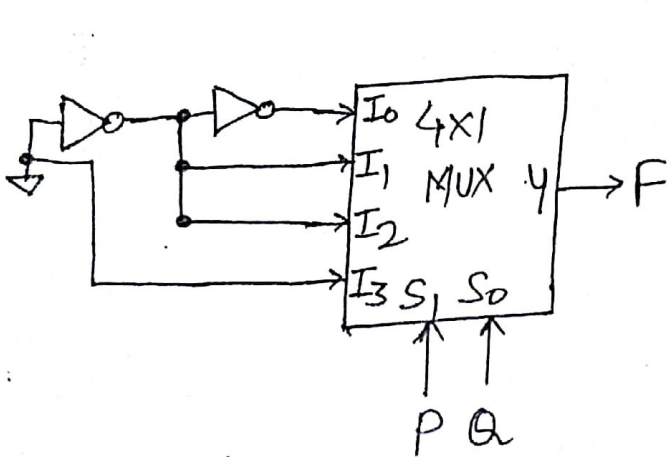


Figure. 1.

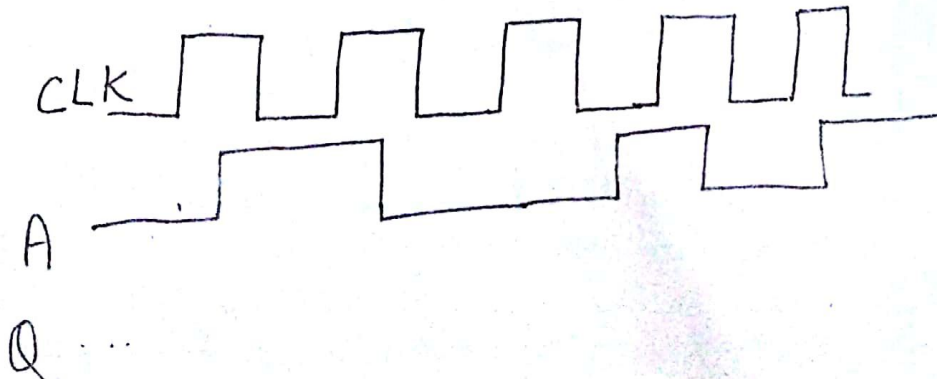
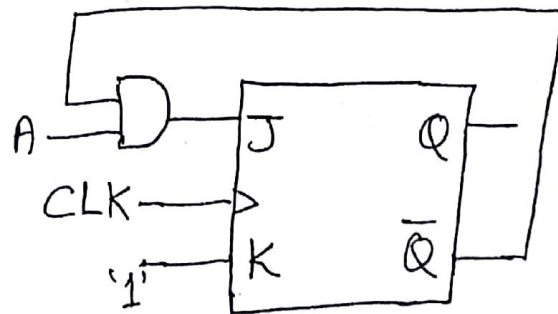


Figure. 2

"ALL THE BEST"