

Digital Logic & Design (Theory)

Examination: Final-Term

Instructor: Muhammad Amin

Program: BS(CS) Course Codes:

CSC-201

EDP Codes: 102002077

Semester: Spring 2020

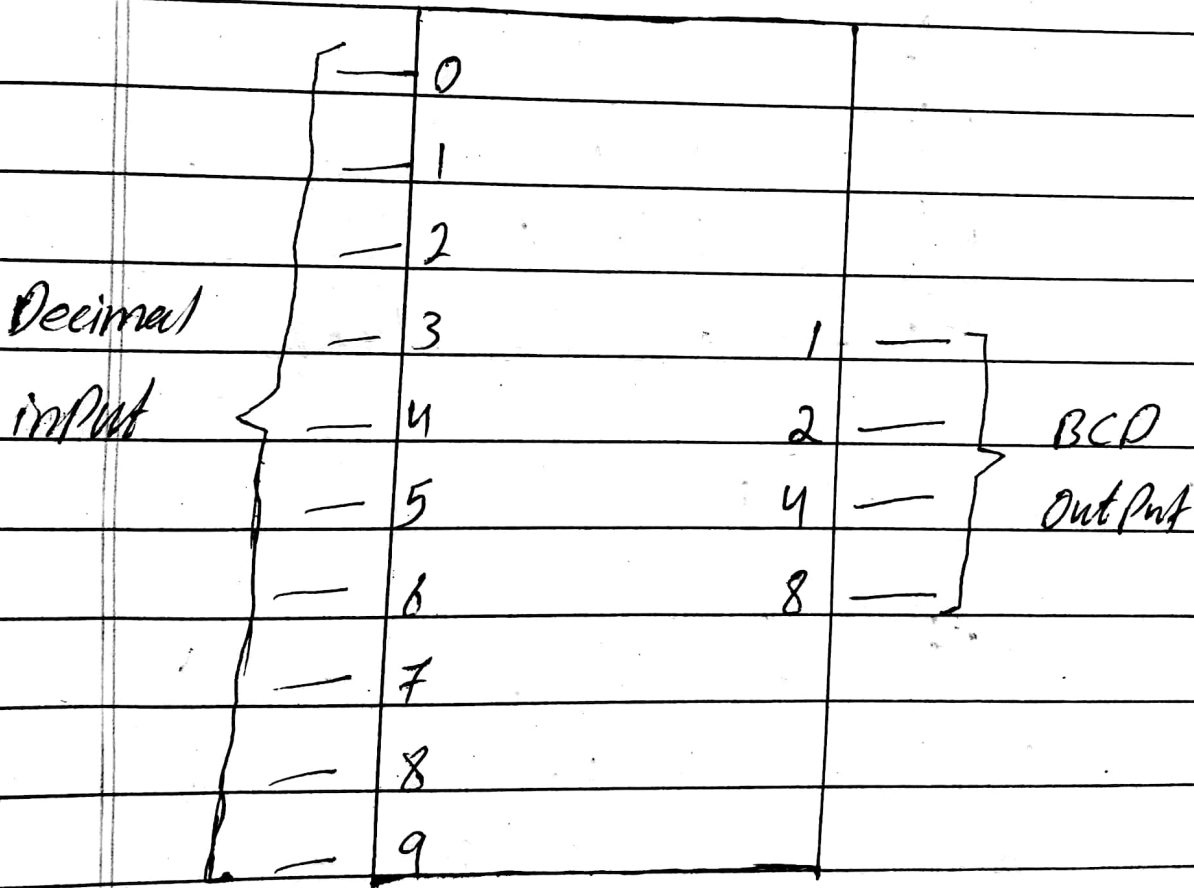
Name = Muhammad Yasir

ID = 15459

Q (01)

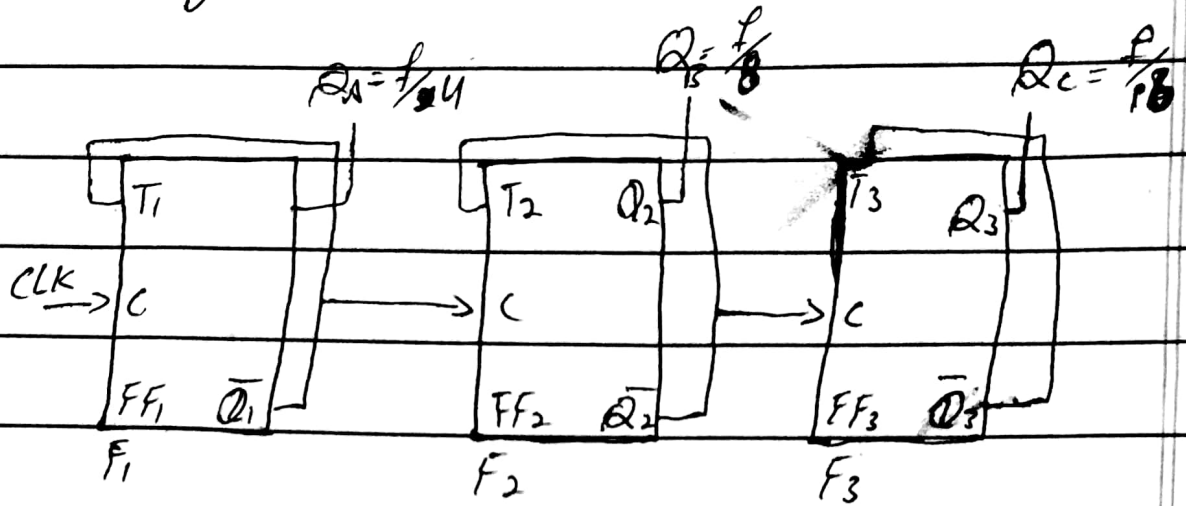
C) Decimal to BCD Encoder.

This type of encoder has ten inputs, one for each decimal digit and four output corresponding to the BCD code. This is a basic 10 line to 4 line encoder.



The relationship between each BCD bit and the decimal digit is coded to analyze the logic. For instance the most significant bit of the BCD code.

d) Frequency divider :-



Here if the input frequency is 16.

Then

$$Q_A = \frac{f}{4} = 4$$

$$Q_B = \frac{f}{8} = 2$$

$$Q_C = \frac{f}{16} = 1$$

~~~~~ 11 ~~~~~ 12 ~~~~~ ✓

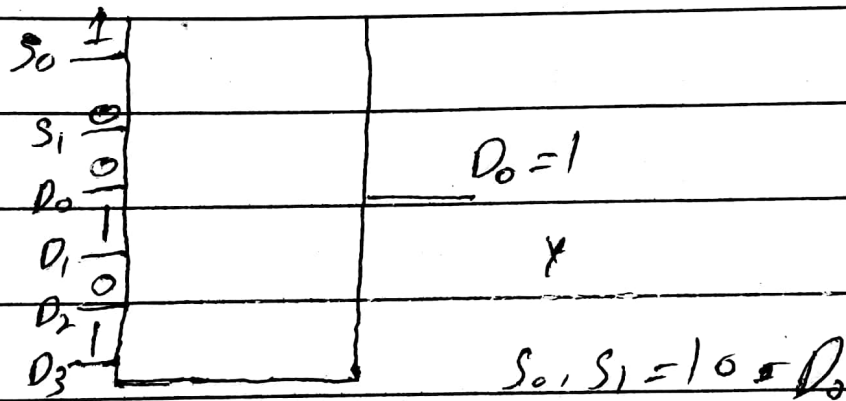
# Question-021

For 4-input multiplexer,  
data in-puts are give as

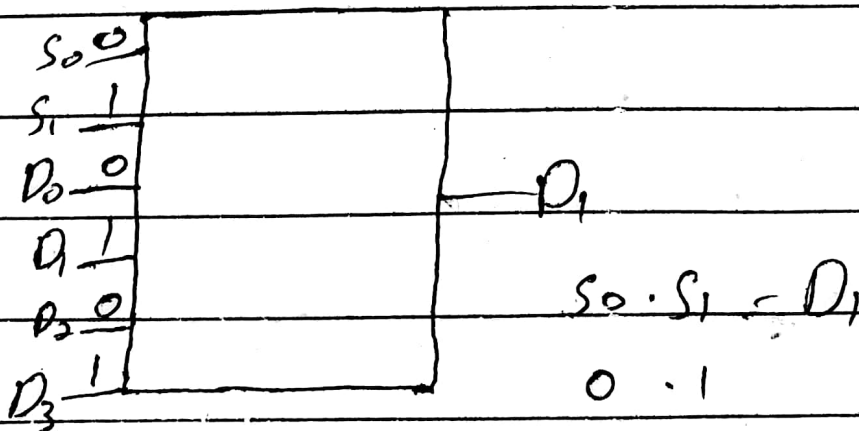
$$D_0 = 0, D_1 = 1, D_2 = 0, D_3 = 1$$

Find output  $Y$ , if select input are

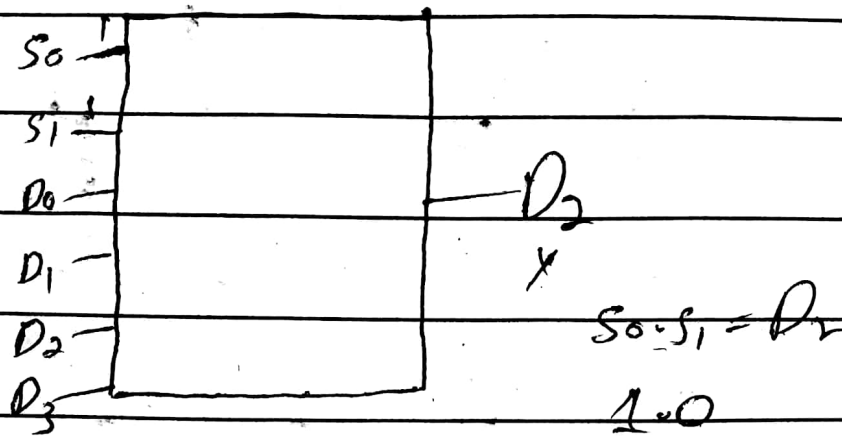
(a)  $S_0 = 1, S_1 = 0$



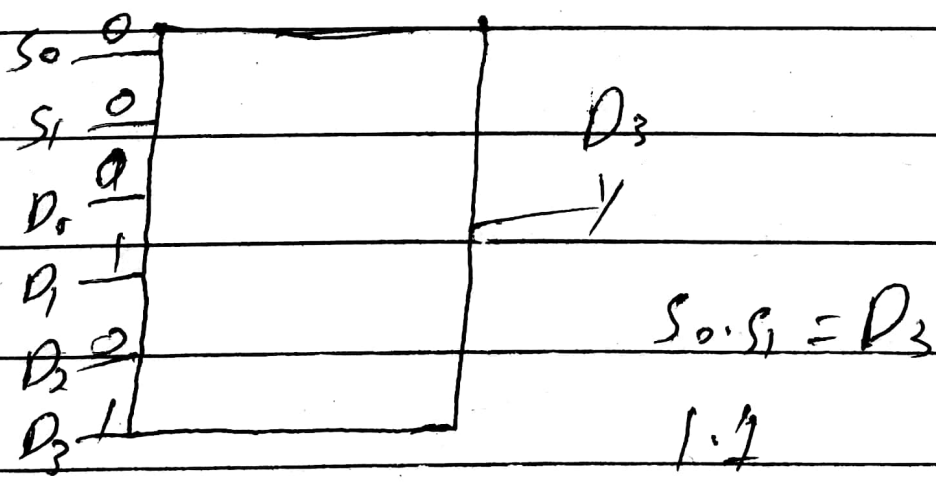
(b)  $S_0 = 0, S_1 = 1$



c)  $S_0 = 0, S_1 = 1$

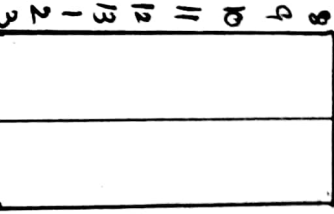
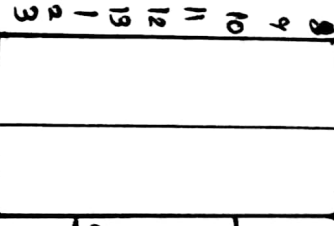
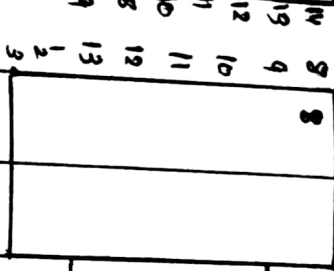
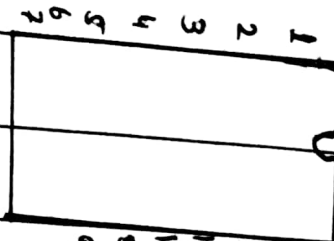


d)  $S_0 = 0, S_1 = 0$



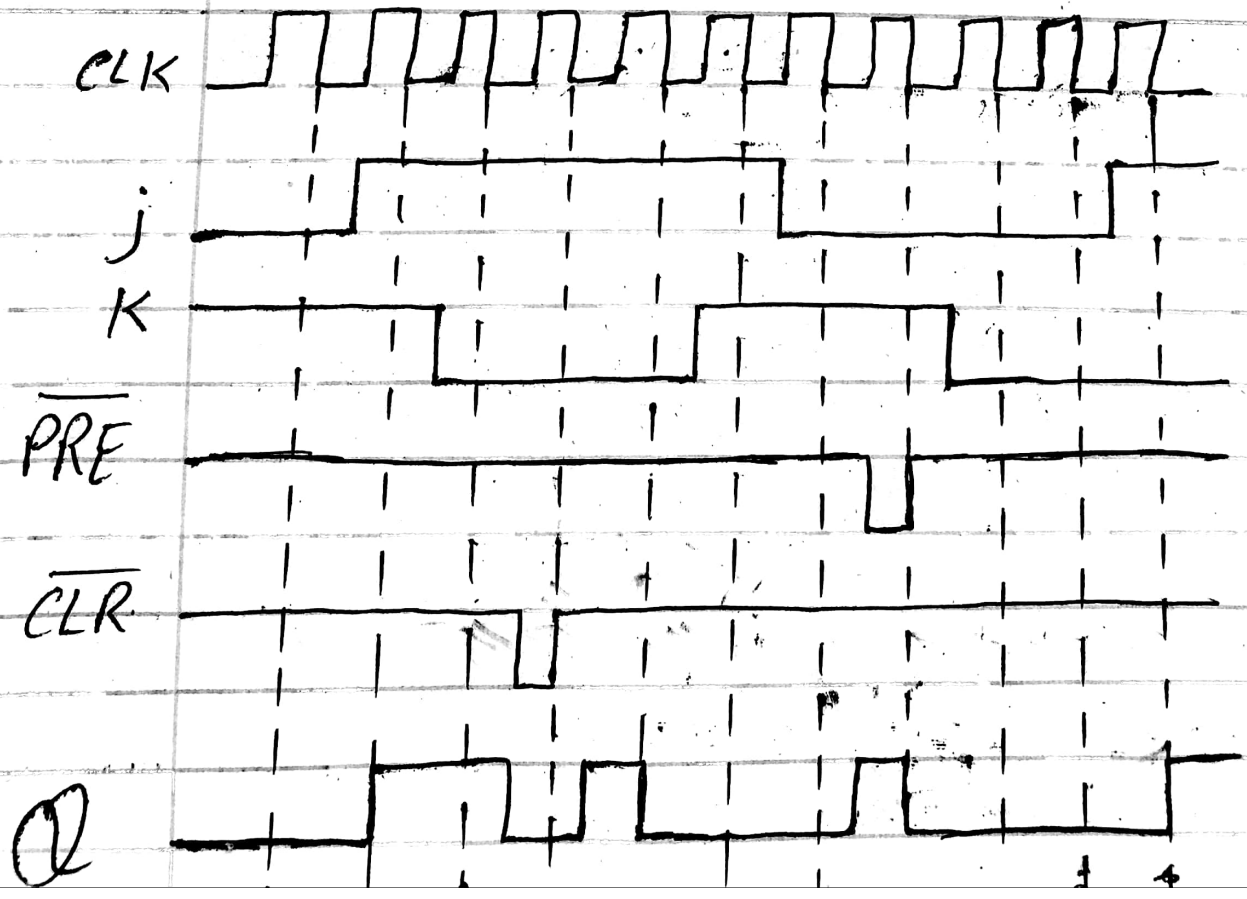


(Q3)

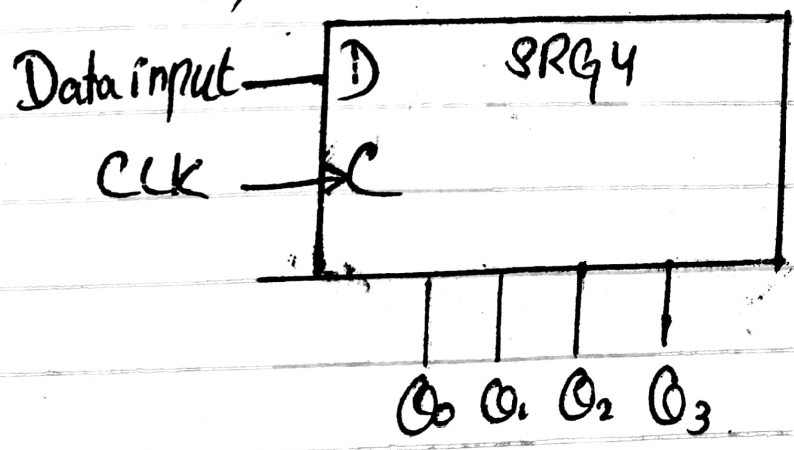
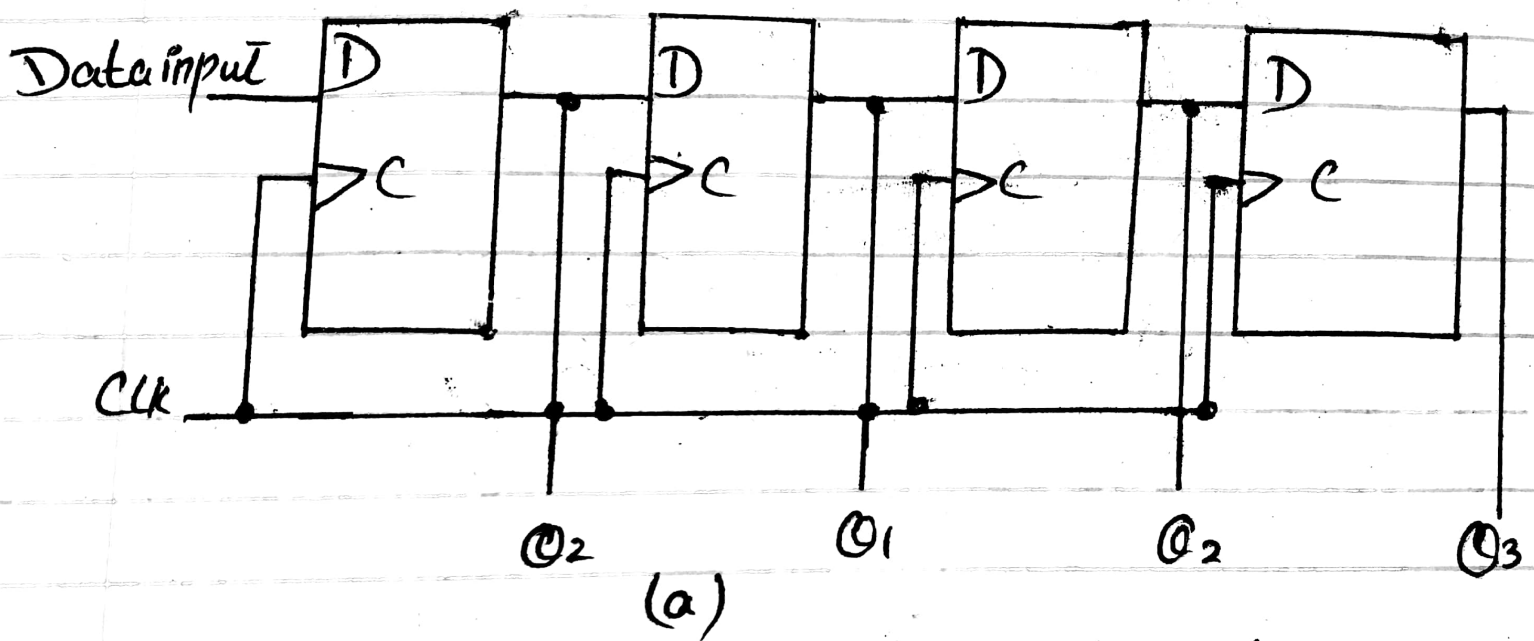


| Input                       | output |
|-----------------------------|--------|
| No of high data input $Z_1$ | $Z_0$  |
| even                        | M      |
| odd                         | L      |

Q#04 The waveform are applied to the  $J$ ,  $K$ ,  $CLK$ ,  $\overline{PRE}$  and  $\overline{CLR}$  input inside. Determine the  $Q$  output.



Question # 05

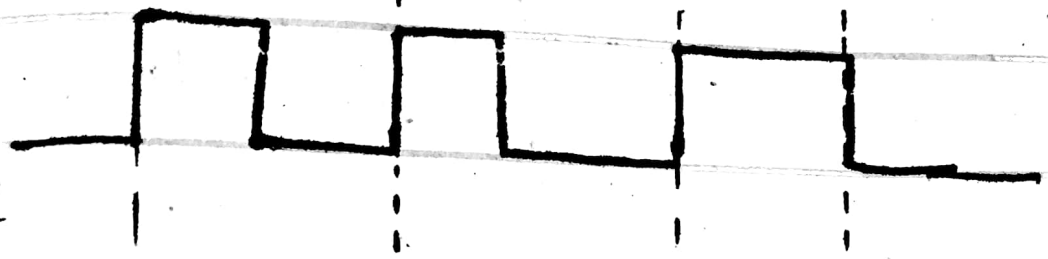




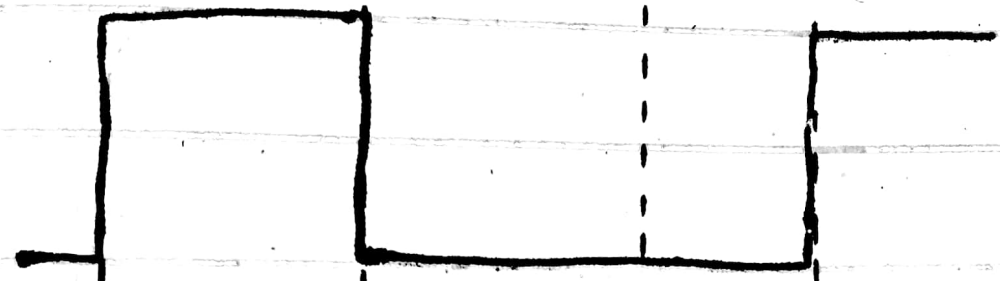
D.in



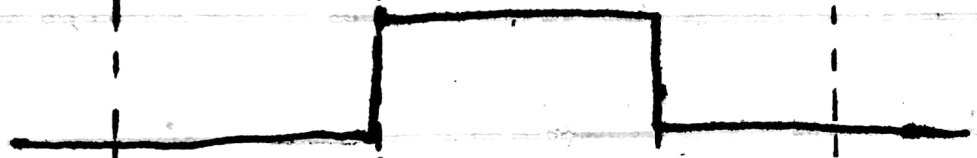
CLK



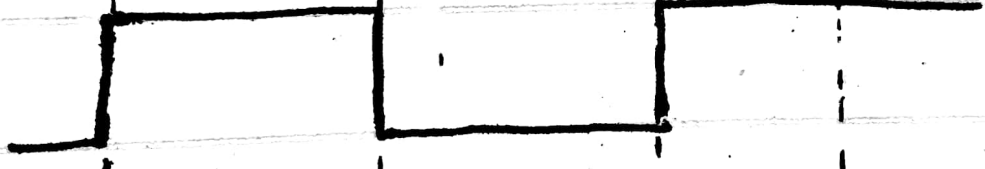
Q<sub>0</sub>



Q<sub>1</sub>



Q<sub>2</sub>



Q<sub>3</sub>



# Question #. 06A

