

30002:Computer Organization(Quiz#1)

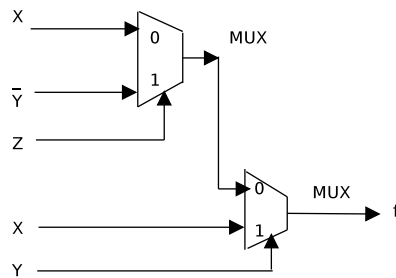
August 19, 2013

Time: 25 minutes

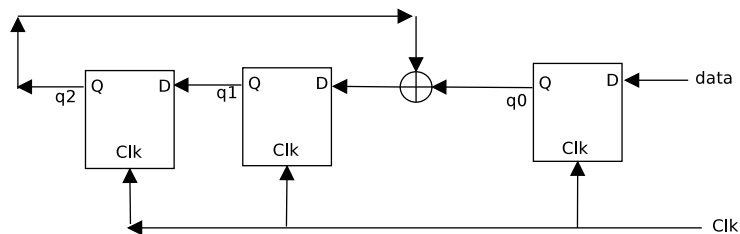
MM 10.

Note: All questions carry equal marks.

- The switching expression corresponding to $f(A, B, C, D) = \Sigma(1, 4, 5, 9, 11, 12)$ is:
 - $BC'D' + A'C'D + AB'D$
 - $ABC' + ACD + B'C'D$
 - $ACD' + A'BC' + AC'D'$
 - $A'BD + ACD' + BCD'$
- Construct a modulo 8 counter using T-flip flops and the basic gates.
- For the figure shown below, which of the following option correctly represents $f(X, Y, Z)$?
 - $X\bar{Z} + XY + \bar{Y}Z$
 - $X\bar{Z} + XY + \bar{Y}\bar{Z}$
 - $XZ + XY + \bar{Y}Z$
 - $XZ + X\bar{Y} + \bar{Y}Z$



- What is the minimum number of D flip-flops needed to design a mod-258 counter ?
- Consider the circuit, the \oplus operator is EX-OR. The D-FF are initialized to zero level. The following



data:100110000 (1 first) is supplied to the “data”terminal in nine clock cycles. After that the value of $q_2q_1q_0$ are: (A)000 (B) 001 (C) 010 (D) 101