

DLD Online 1

Section A1 & B1

Consider there are four 1-bit Boolean inputs A,B,C and D. Implement the following Boolean functions using only the 7400-series IC chips: IC 74x04, IC 74x08 and IC 74x32 in your circuit.

Time: 30 minutes + 5 Minutes to submit in Moodle.

$$1. A'C'D + A'CD' + BC'D' + AB'D = \Sigma(1,2,4,5,6,9,11,12)$$

$$2. A'C'D + A'BC' + AB'D + ABD' = \Sigma(1,4,5,9,11,12,14)$$

$$3. BC'D + A'BD + B'CD + B'C'D' = \Sigma(0,3,5,7,8,11,13)$$

$$4. B'CD' + BC'D + A'BC + AB'D' = \Sigma(2,5,6,7,8,10,13)$$

$$5. A'BCD' + AB'D + ABC'D' = \Sigma(2,9,11,12)$$