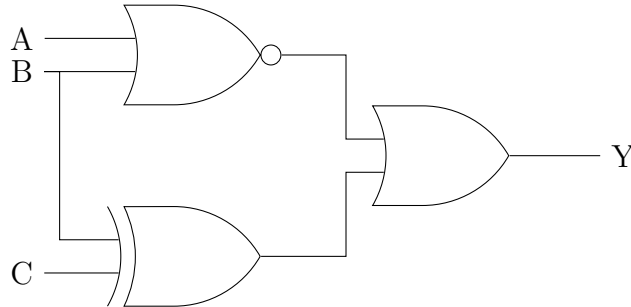


1. Example Paper questions 1-9.
2. Write the truth table for this circuit:



3. Give a boolean logic expression (no circuit needed) in sum-of-products (DNF) form where the minimal representation is made up of the following:
  - (a) Four essential prime implicants of 4 literals.
  - (b) An essential prime implicant of 2 literals, and one of 4 literals.

Recall that an *essential prime implicant* is a prime implicant that covers a True (1) output of the function that no combination of other prime implicants is able to cover.

4. Show how to implement the boolean function  $F$  using only NAND gates:

$$F(A, B, C, D, X, Y) = (A \cdot B) + (C \cdot D) + (X \cdot Y)$$