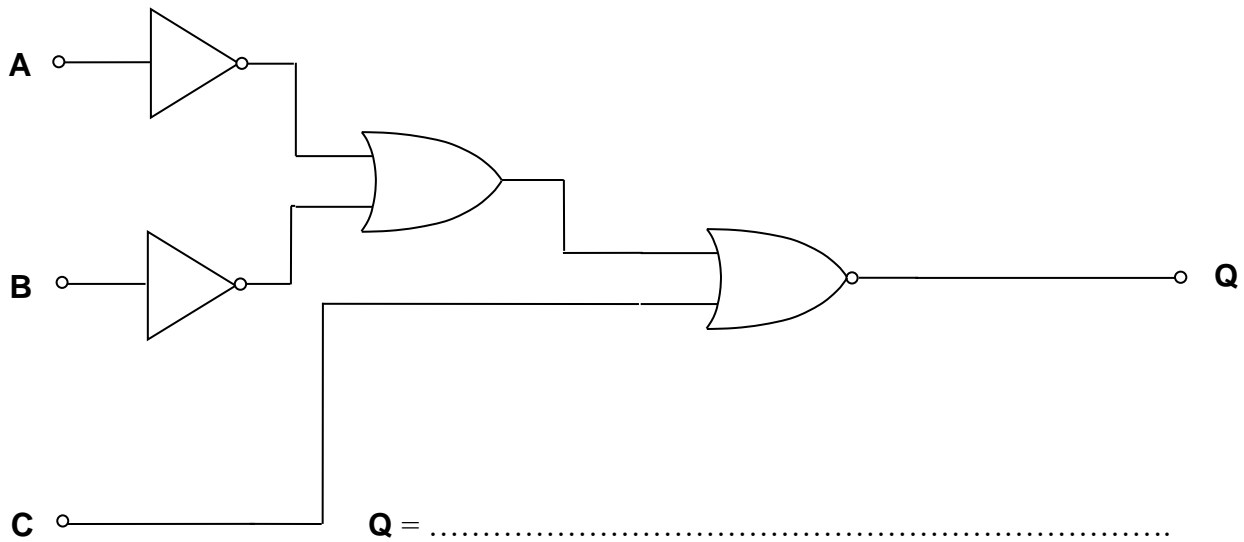


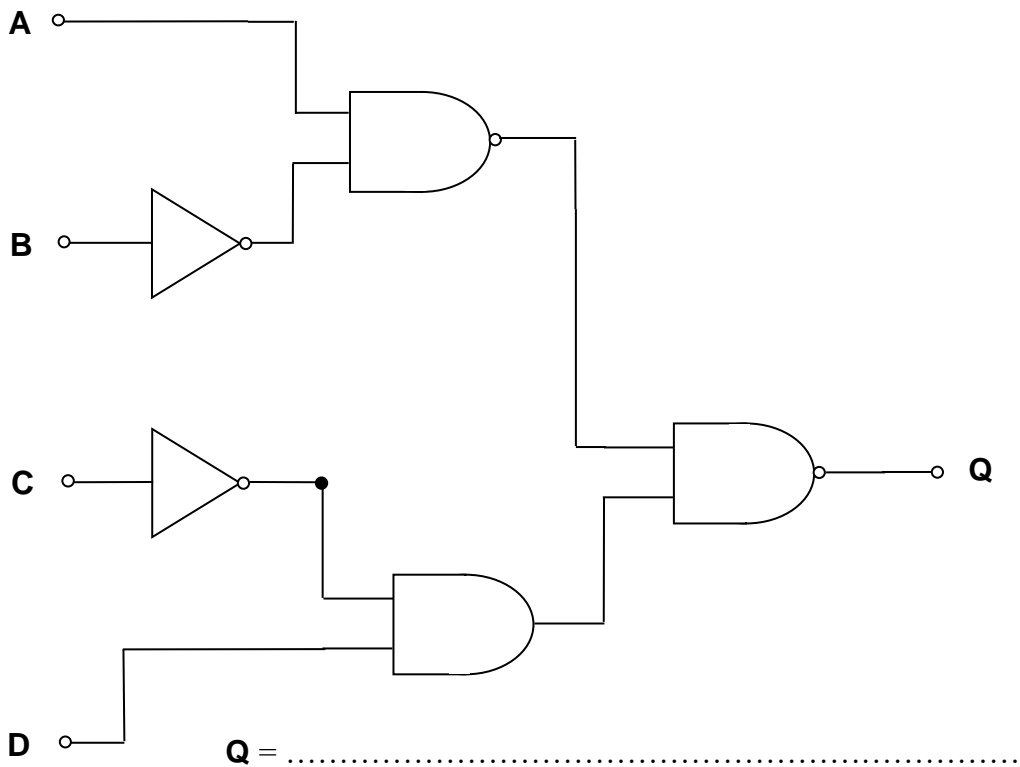
Boolean logic

Exercise 1: Derive the Boolean Expression for the output of the following logic systems.

1.

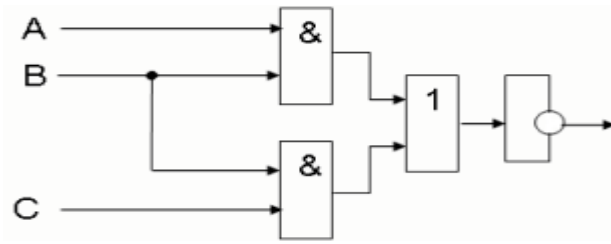


2.



Remember to be very careful with the NAND gates.

Exercise 2: Derive the Boolean Expression for the output of the following logic systems.



Q =

Exercise 3 : Simplify the following Boolean expressions.

1. $Q = AB + B$

.....

2. $Q = C.(A + \bar{C})$

.....

3. $Q = ABC\bar{C} + A\bar{C} + \bar{A}\bar{C}D + \bar{A}C\bar{D}$

.....

Exercise 4. - Simplify the following expressions as much as possible.
(De Morgan)

1. $Q = \overline{\overline{A+B}} \cdot \overline{\overline{AB}} + \overline{A}B$

.....

.....

.....

.....

.....

.....

.....

.....

.....

Exercise 5: Draw the Logic Circuit diagram for the Boolean expressions given.

1. $Q = A\overline{B} + BC$

2. $Q = \overline{A+B} + \overline{A} \cdot (C+B)$