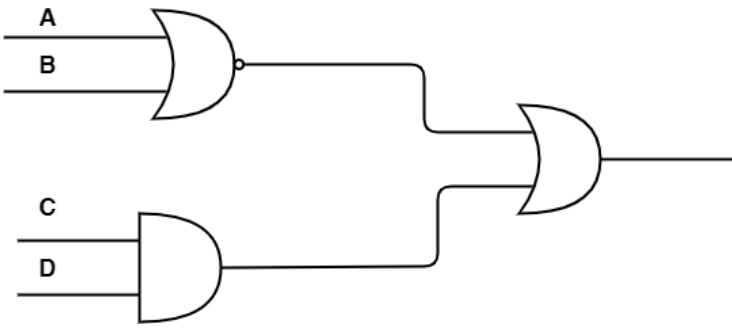


**Topic 6 – Digital Logic (Due end of Week 7)**

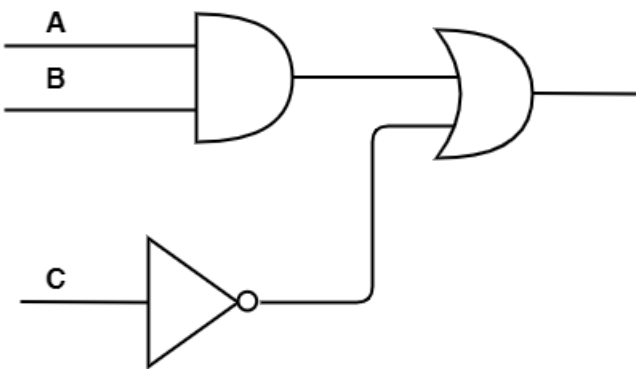
**Assignment 2 - Logic Gates (20 Marks)**

**Show the final equation and truth table**

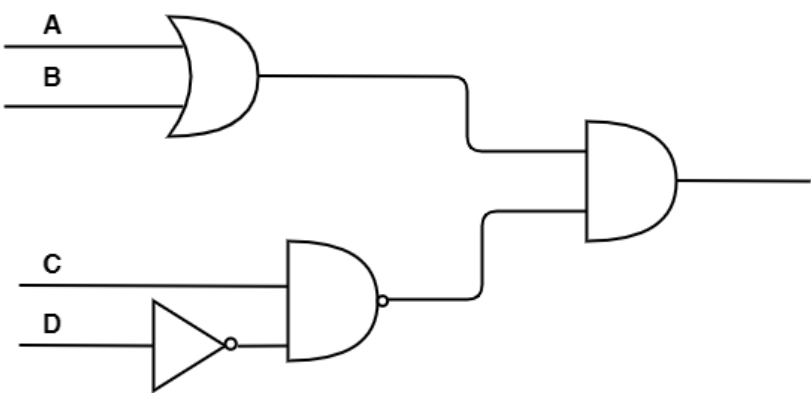
For the following circuits, work out the final equation and draw the corresponding truth tables.

1.  (6 Marks)

Detailed description: This circuit consists of three logic gates. The top gate is an OR gate with two inputs labeled 'A' and 'B'. The bottom gate is an AND gate with two inputs labeled 'C' and 'D'. The output of the OR gate is connected to the top input of a second OR gate. The output of the AND gate is connected to the bottom input of the same second OR gate. The final output is the output of this second OR gate.

2.  (6 Marks)

Detailed description: This circuit consists of three logic gates. The top gate is an AND gate with two inputs labeled 'A' and 'B'. The bottom gate is a NOT gate with one input labeled 'C'. The output of the AND gate is connected to the top input of an OR gate. The output of the NOT gate is connected to the bottom input of the same OR gate. The final output is the output of this OR gate.

3.  (8 Marks)

Detailed description: This circuit consists of four logic gates. The top gate is an OR gate with two inputs labeled 'A' and 'B'. The bottom gate is an AND gate with two inputs labeled 'C' and 'D'. The output of the OR gate is connected to the top input of a final AND gate. The output of the AND gate is connected to the bottom input of the same final AND gate. The final output is the output of this final AND gate.