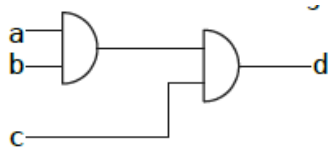
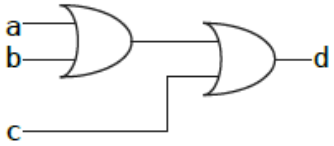
Digital Circuits (ECE111) **2024**

Tutorial-4

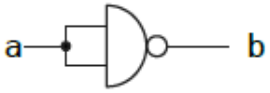
Question1: Consider the following Circuits.



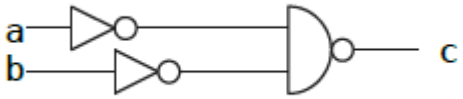
(i)



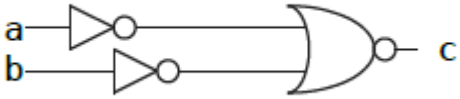
(ii)



(iii)



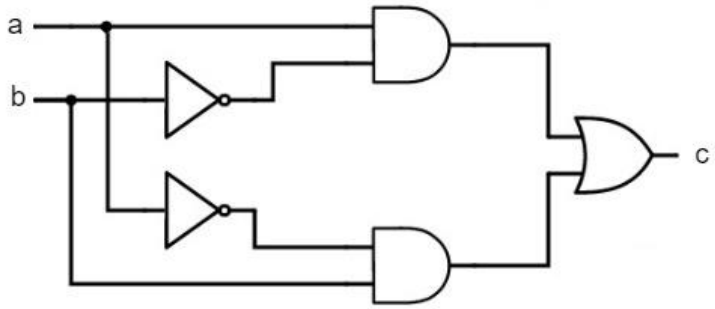
(iv)



(v)

(A) Write the relationship between input variables and output.
(B) Write down the truth table that accurately represents the relationship between the inputs and the output of each of the mentioned circuits.

Question2: Consider the following Circuit.

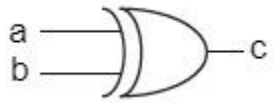


(i) Write down the expression for c in terms of a and b.
(ii) Prepare a truth table based on the truth table.

Question3: Consider the following Circuit that is given Question 2. Consider the following for input a and b.

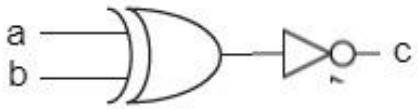
(A) If b is connected to ground (logic=0) then what will be the expression c.
(B) If b is connected to Vcc (logic=1) then what will be the expression c.
(C) Do you observe any difference between two expressions of c obtained for conditions ground (logic=0) and Vcc (logic=1) to b input.

Question4: Let consider the circuit that is given Question 2 represented with the following unit.



(One unit representation of the circuit as given in the Question 2)

Now connect an inverter at the output of the above unit as shown in the following figure.



(i) Write a truth table that accurately represents the relationship between the inputs a,b and the output c of the mentioned above circuit.
(ii) Write the expression for c in terms of a and b.