



# INDIAN SCHOOL AL WADI AL KABIR

<b>Class: XI</b>	<b>Department: Computer Science</b>	<b>Date of submission: 28/08/2022</b>
<b>Worksheet -2</b>	<b>Topic: Boolean Algebra</b>	<b>Note: for practice</b>

1. Prove the Boolean Laws shown below using Truth Table.

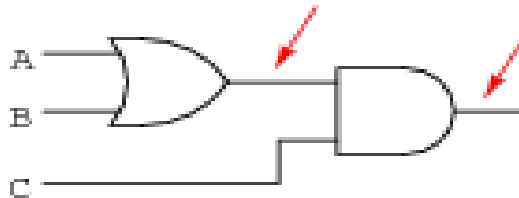
- a)  $X + X'Y = X + Y$
- b)  $X + XY = X$
- c)  $X + YZ = (X + Y)(X + Z)$

2. Write a short note on Boolean Algebra explaining all the gates.

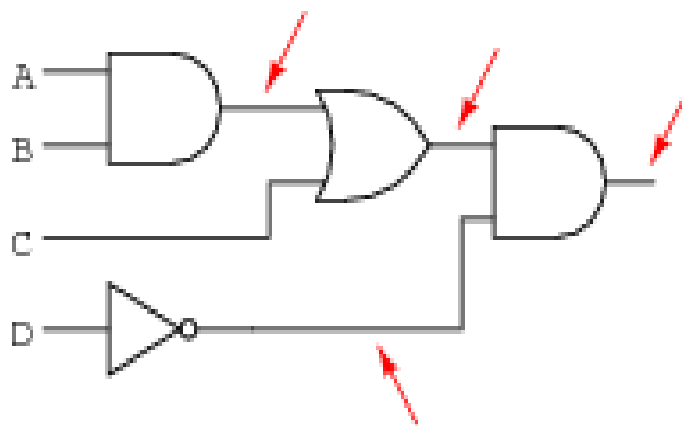
3. State and prove De Morgan's Theorems using truth table

4. Convert the following logic gate circuit into a Boolean expression. (Write the Boolean expression for the given circuits)

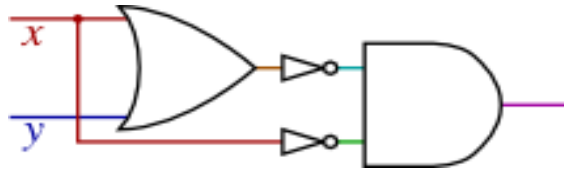
a)



b)



c)



5. Draw a circuit diagram and truth table for the given Boolean Expressions:

a)  $y = A + C \cdot B + C' \cdot A' + B + C$

b)  $F = A' \cdot B \cdot C \cdot (A + D)'$

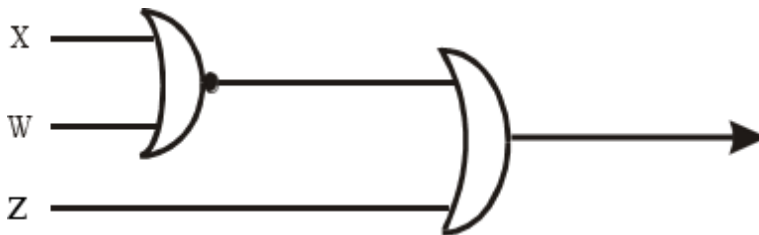
c)  $F = A \cdot B' + C' \cdot D$

d)  $F = (U \cdot V') + (U' \cdot W')$

e)  $F = A \cdot B + A \cdot C' + B' \cdot A' \cdot C$

f)  $F = (X + Y) \cdot (X' + Z') \cdot (Y + Z)$

6. Obtain logic expression for the following logic circuit:



7. Write the Boolean expression for the given below logic circuit.

