

1. Explain the basic logic gates with its logic diagram, truth table and Boolean expression
2. What are universal logic gates? Realize NAND and NOR as universal logic gates with graphical symbol, truth table, algebraic expression.
3. Draw the logic circuit of the expression
 - a. $A+BC+AB$
 - b. $A'B+CA+BC$
 - c. $(A'+B')(A+B)$
 - d. $(AB+BC)(AC+B'C)$
4. Draw the logic circuit of the expression using NAND and NOR only
 - a. $A+B+C$
 - b. $AB+BC$
 - c. $A'B+B'C$
 - d. $(A'+B)(A+B)$
5. What is the difference between canonical and standard form? Justify with an example.
6. Convert the following
 - a. $F(abc) = ab+bc'+a$ in to Canonical SOP
 - b. $F(abc) = (a+b')(a+b+c)(a+c)$ in to Canonical POS
7. Write Short Notes on:
 - a. Min Term
 - b. Max Term
 - c. Literals
 - d. SOP
 - e. POS