



TUTORIAL-1

1. Without using truth table find the PCNF and PDNF of $P \rightarrow (Q \wedge P) \wedge (\neg P \rightarrow (\neg Q \wedge \neg R))$.
[Ans: PCNF: $(\neg P \vee Q \vee R) \wedge (\neg P \vee Q \vee \neg R) \wedge (\neg P \vee \neg Q \vee R) \wedge (P \vee \neg Q \vee R) \wedge (P \vee \neg Q \vee \neg R) \wedge (P \vee Q \vee \neg R)$
PDNF: $(P \wedge Q \wedge R) \vee (\neg P \wedge \neg Q \wedge \neg R)$].
2. Obtain the product of sum canonical form of the formula $(\neg P \rightarrow R) \wedge (Q \leftrightarrow P)$
3. Find the PCNF of $(P \vee R) \wedge (P \vee \neg Q)$. Also find its PDNF, without using truth table.
4. Obtain the PCNF and PDNF of $(P \wedge Q) \vee (\neg P \wedge R)$