DNF: If a statement formula can be written as disjuctions of conjuctions then that form is called as Disjunctive Normal form (DNF).

Eg:- $P \vee Q$, $P \vee (Q \wedge R)$,

$(P \wedge Q) \vee (Q \wedge R) \vee (Q \wedge \neg P)$

CNF: A statement is said to be in the form of Conjuctive Normal form if it is written as Conjuctions of disjunctions

Eg: $P \wedge Q$, $P \wedge (Q \vee R)$, $(P \vee Q) \wedge (Q \vee \gamma)$

Dual of a statement:-

Dual of $p \wedge q = p \vee q$

Dual of $p \wedge q = p \vee q$

or $(p \wedge q) \vee r = (p \vee q) \wedge r$

~~Obj~~ Obtain the DNF of $p \wedge (p \rightarrow q)$

Soln:

$$p \wedge (p \rightarrow q) \equiv p \wedge (\neg p \vee q)$$

$$\equiv (p \wedge \neg p) \vee (p \wedge q)$$