Obtain the disjunctive normal form using truth table:

$(p \wedge q) \vee (\sim p \wedge r) \vee (q \wedge r)$

p	q	r	~p	p∧q	~p∧r	(p∧q)∨(~p∧r)	q∧r	A
T	T	T	F	T	F	T	T	T ✓
T	T	F	F	T	F	T	F	T ✓
T	F	T	F	F	F	F	F	F
T	F	F	F	F	F	F	F	F
F	T	T	T	F	T	T	T	T ✓
F	T	F	T	F	F	F	F	F
F	F	T	T	F	T	T	F	T ✓
F	F	F	T	F	F	F	F	F

∴ dnf is,

$(p \wedge q \wedge r) \vee (p \wedge q \wedge \sim r) \vee (p \wedge q \wedge r) \vee (\sim p \wedge \sim q \wedge r)$.

Obtain the conjunctive normal form using truth table: $(\sim p \rightarrow r) \wedge (q \leftrightarrow p)$

p	q	r	~p	~p→r	q↔p	A
T	T	T	F	T	T	T
T	T	F	F	T	T	T
T	F	T	F	T	F	F ✓
T	F	F	F	T	F	F ✓
F	T	T	T	T	F	F ✓
F	T	F	T	F	F	F ✓
F	F	T	T	T	T	T
F	F	F	T	F	T	F ✓

Here truth value is F.

$(p \wedge \sim q \wedge r) \vee (p \wedge \sim q \wedge \sim r) \vee (\sim p \wedge q \wedge r) \vee (\sim p \wedge q \wedge \sim r) \vee (\sim p \wedge \sim q \wedge \sim r)$

Hence cnf is,

$(\sim p \vee q \vee \sim r) \wedge (\sim p \vee q \vee r) \wedge (p \vee \sim q \vee \sim r) \wedge (p \vee \sim q \vee r) \wedge (p \vee q \vee r)$