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Quiz-2 (29-03-2020)

1 message

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Which of the following is/are semantically equivalent? * $p \rightarrow q$ and $\sim q \rightarrow \sim p$  $p \wedge q \rightarrow p$ and $r \vee \sim r$

☒ $p \wedge q \rightarrow r$ and $p \rightarrow (q \rightarrow r)$

☒ $p \rightarrow q$ and $\sim p \vee q$

Which of the following is not in CNF? *

☐ $x \wedge \sim y \wedge z$

☐ $(\sim y) \wedge (y \vee z)$

☐ $x \vee \sim y \vee z$

☒ $x \vee \sim y \wedge z$

Which of the following will not be in the CNF of: $(p \vee q) \rightarrow (q \wedge \sim r)$ *

☐ $p \vee \sim q \vee \sim r$

☐ $\sim p \vee q \vee r$

☒ $p \vee q \vee \sim r$

☐ $\sim p \vee \sim q \vee \sim r$

$(x \wedge \sim(y \vee z) \vee u)$ is semantically equivalent to *

☐ $(x \wedge (\sim y \wedge \sim z \vee u))$

☐ $(\sim x \vee (\sim y \wedge \sim z \vee u))$

☐ $((x \wedge \sim y) \wedge (\sim z) \vee u)$

☒ $((x \wedge \sim y \wedge \sim z) \vee u)$

Translate the following sentence into propositional logic: If you concentrate only if you are threatened, then you will not pass unless you are threatened – provided that concentrating is a necessary condition for passing. (C: concentrate, T: threatened, P: will pass) *

- ☐ $(\sim C \rightarrow \sim P) \rightarrow (\sim T \rightarrow \sim C) \rightarrow (\sim T \rightarrow \sim P)$
- ☒ $(\sim C \rightarrow \sim P) \rightarrow ((\sim T \rightarrow \sim C) \rightarrow (\sim T \rightarrow \sim P))$
- ☐ $((\sim C \rightarrow \sim P) \rightarrow (\sim T \rightarrow \sim C)) \rightarrow (\sim T \rightarrow \sim P)$
- ☐ None of the above

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