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CS433 Q 1: Which of the following are true (|p is projection on literal p)?

- [ ] $(\neg p \vee q \vee r)|p = \bot$
- [ ] $(q)|p = p$
- [ ] $(\neg p \wedge q \wedge r)|p = \bot$
- [ ] $(q)|p = q$

Answer

Note: please be careful before submitting the answer. You will not be able to change the answers.

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CS433 Q 1: Which of the following are true (|p is projection on literal p)?

You have answered the following:

✘ (¬p ∨ q ∨ r)|p = ⊥ (You are correct)
✔ (q)|p = p (You are incorrect)
✔ (¬p ∧ q ∧ r)|p = ⊥ (You are correct)
✘ (q)|p = q (You are incorrect)

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CS433 Q 2: How many nodes are there in the ROBDDs of the following formulas (including reachable ⊥ and ⊤ nodes)? Assume variable ordering p1 < p2.

- [ ] ROBDD for p1 ∧ p2 has 4 nodes.
- [ ] ROBDD for p2 ∨ ¬p2 has 3 nodes.
- [ ] ROBDD for p1 has 3 nodes.
- [ ] ROBDD for p1 ⊕ p2 has 4 nodes.

Answer

Note: please be careful before submitting the answer. You will not be able to change the answers.

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CS433 Q 2: How many nodes are there in the ROBDDs of the following formulas (including reachable ⊥ and ⊤ nodes)? Assume variable ordering p1 < p2.

You have answered the following:

✔ ROBDD for p1 ∧ p2 has 4 nodes. (You are correct)
✔ ROBDD for p2 ∨ ¬p2 has 3 nodes. (You are incorrect)
✔ ROBDD for p1 has 3 nodes. (You are correct)
✔ ROBDD for p1 ⊕ p2 has 4 nodes. (You are incorrect)

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CS433 Q 3: Due to self-subsumption, which of the following replacements are correct?

- [ ] p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if r ∨ s is present.
- [ ] p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if ¬p ∨ q ∨ r ∨ s is present.
- [ ] p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if s is present.
- [ ] p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if r ∨ ¬s is present.

Answer

Note: please be careful before submitting the answer. You will not be able to change the answers.

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CS433 Q 3: Due to self-subsumption, which of the following replacements are correct?

You have answered the following:

✘ p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if r ∨ s is present. (You are incorrect)
✘ p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if ¬p ∨ q ∨ r ∨ s is present. (You are correct)
✔ p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if s is present. (You are correct)
✘ p ∨ q ∨ r ∨ ¬s is replaced by p ∨ q ∨ r if r ∨ ¬s is present. (You are correct)

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CS433 Q 4: Which of the following is true about modern SAT solvers?

- [ ] CDCL stands for clause detection conflict learning.
- [ ] Phase saving is one of the optimizations of SAT solver.
- [ ] SAT solvers take CNF formulas as input.
- [ ] SAT solvers implement CDCL.

Answer

Note: please be careful before submitting the answer. You will not be able to change the answers.

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CS433 Q 4: Which of the following is true about modern SAT solvers?

You have answered the following:

✘ CDCL stands for clause detection conflict learning. (You are correct)
✔ Phase saving is one of the optimizations of SAT solver. (You are correct)
✔ SAT solvers take CNF formulas as input. (You are correct)
✔ SAT solvers implement CDCL. (You are correct)

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