Module3-quiz-SP23 ⚡

Due Feb 19 at 11:59pm   **Points** 10   **Questions** 10
Available Feb 5 at 12am - Feb 20 at 2:59am
Time Limit 300 Minutes

Attempt History

	Attempt	Time	Score
LATEST	**Attempt 1**	7 minutes	10 out of 10

⚠ Correct answers will be available on Feb 20 at 11:59pm.

Score for this quiz: **10** out of 10
Submitted Feb 15 at 1:22am
This attempt took 7 minutes.

Question 1   1 / 1 pts

Is the formula $(p \rightarrow q) \rightarrow (r \rightarrow s)$ a propositional rule?

○ True

● False

> It is not a propositional rule as there are implications on the both sides. Left and right hand sides should be implication free.

Question 2   1 / 1 pts

What will be the ground term with values 25, 125, 625?

○ 5 ** (2..4)

○ None of the above

○ 5 ** (1..3)

○ 5 ** (0..4)

Question 3

1 / 1 pts

What is/are the stable model generated by clingo for **P(X, Y) :- Y = 1..9 , Y = 3 * X?**

○ {p(1,3), p(3,9), p(6,9)}

○ {p(1,3), p(3,6), p(3,9)}

⦿ {p(1,3), p(2,6), p(3,9)}

As clingo doesn't take fractions, it will return above models.

○ {p(1,6), p(2,4),p(3,9)}

Question 4

1 / 1 pts

Assuming $\sigma = \{p, q, r, s\}$, find ALL minimal models of the program:

$\{p \vee q, r \leftarrow p, s \leftarrow q\}$

○ {p,r}

○ {p,q,r} and {s}

○ {p,q} and {r}

◉ {p,r} and {q,s}

Question 5

1 / 1 pts

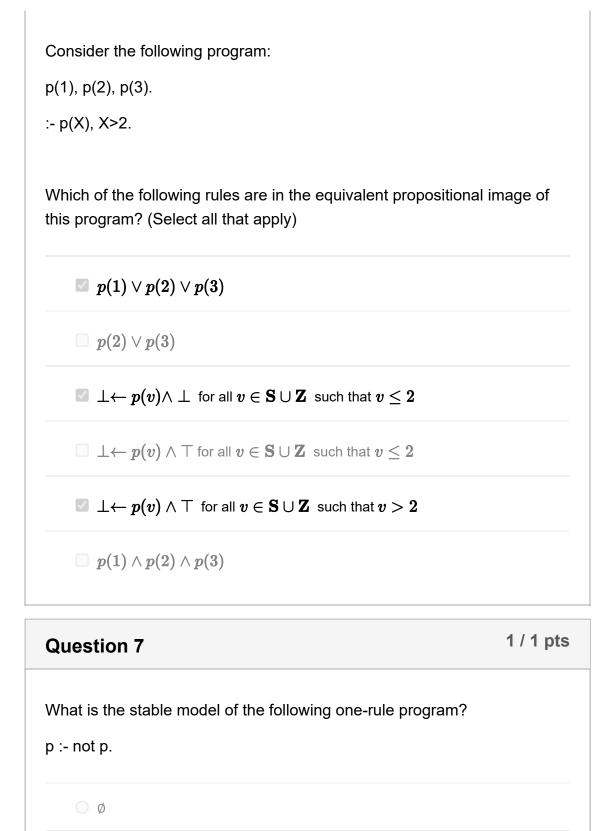Consider the following program:

p(1..3).

q(X) :- p(X) , X=2..4 .

Which of the following rules are present in the equivalent propositional image for this program (select all that apply):

☐ $p(2) \wedge p(3) \wedge p(4)$

☑ $q(4) \leftarrow p(4) \wedge \top$

☑ $q(v) \leftarrow p(v) \wedge \bot$ for all $v \in \mathbf{S} \cup \mathbf{Z} \backslash \{2, 3, 4\}$

☑ $q(3) \leftarrow p(3) \wedge \top$

☑ $p(1) \wedge p(2) \wedge p(3)$

☑ $q(2) \leftarrow p(2) \wedge \top$

☐ $q(1) \leftarrow p(1) \wedge \top$

Question 6

1 / 1 pts

Consider the following program:

p(1), p(2), p(3).

:- p(X), X>2.

Which of the following rules are in the equivalent propositional image of this program? (Select all that apply)

- ☑ $p(1) \lor p(2) \lor p(3)$

- ☐ $p(2) \lor p(3)$

- ☑ $\bot \leftarrow p(v) \land \bot$ for all $v \in \mathbf{S} \cup \mathbf{Z}$ such that $v \leq 2$

- ☐ $\bot \leftarrow p(v) \land \top$ for all $v \in \mathbf{S} \cup \mathbf{Z}$ such that $v \leq 2$

- ☑ $\bot \leftarrow p(v) \land \top$ for all $v \in \mathbf{S} \cup \mathbf{Z}$ such that $v > 2$

- ☐ $p(1) \land p(2) \land p(3)$

Question 7   1 / 1 pts

What is the stable model of the following one-rule program?

p :- not p.

- ○ ∅

- ◉ No stable model

- ○ {p}

Question 8

1 / 1 pts

The propositional image of a clingo program consists of the instances of its rules rewritten as propositional formulas. Which option is equivalent to the propositional image of the following clingo program?

p(3..6).

q(X*2) :- p(X), X<5.

○ $p(3) \wedge p(4) \wedge p(5) \wedge p(6)$
$q(6) \leftarrow p(3)$
$q(8) \leftarrow p(4)$

○ $p(3) \wedge p(6)$
$q(6) \leftarrow p(3)$

○ $p(3)$
$p(4)$
$p(5)$
$p(6)$
$q(6) \leftarrow p(3)$
$q(8) \leftarrow p(4)$
$q(10) \leftarrow p(5)$
$q(12) \leftarrow p(6)$

○ $p(3)$
$p(6)$
$q(6) \leftarrow p(3)$
$q(8) \leftarrow p(4)$
$q(10) \leftarrow p(5)$
$q(12) \leftarrow p(6)$

Question 9

1 / 1 pts

Which of the clingo programs can represent "either a is true or b is true"?

___

a :- not b.

⦿ b :- not a.

___

a :- not a.

◯ b :- not b.

___

◯ p(a;b).

___

a.

◯ b.

Question 10   1 / 1 pts

True or False? For any propositional formula F, every stable model of F is a model of F.

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⦿ True

___

◯ False

Quiz Score: **10** out of 10