Module 3 Graded Quiz

Due Feb 20 at 11:59pm **Points** 10 **Questions** 10
Available after Feb 6 at 11:59pm **Time Limit** 300 Minutes
Allowed Attempts 3

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	21 minutes	10 out of 10

Score for this attempt: **10** out of 10
Submitted Feb 20 at 5:26pm
This attempt took 21 minutes.

Question 1

1 / 1 pts

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

p :- not p.

- {p}
- Correct! No stable model
- ∅

Question 2

1 / 1 pts

Assuming the signature consists of p, q, r. Which of the options are **models** of the following program?

$p \leftarrow q \wedge r$

$q \leftarrow p$

$r \leftarrow p$

Choose all that apply.

Correct! ☑ ∅ (empty set)

☐ {q, r}

Correct! ☑ {r}

Correct! ☑ {q}

Correct! ☑ {p, q, r}

☐ {p}

☐ {p, q}

Question 3

1 / 1 pts

Assuming the signature consists of p, q, r. Which of the option is the stable model of the following program?

$p \leftarrow q \wedge r$

$q \leftarrow p$

$r \leftarrow p$

○ {q, r}

{p, q}

{p}

{r}

Correct!

∅ (empty set)

{p, r}

{p, q, r}

{q}

Question 4

1 / 1 pts

Which option is a positive program in the language of clingo?

cloudy, rain :- not sunny.

wet :- rain.

#const n=5.

composite(N) :- N=1..n, I=2..N-1, N\I=0.

prime(N) :- N=2..n, not composite(N).

number(1).

small_number(1).

big_number(X) :- number(X), not small_number(X).

Correct!

#const k=2.

fullTimeStudent, partTimeStudent :- student.

student :- k=1..3.

Question 5

1 / 1 pts

How many atoms are there in the stable model of the following clingo program?

pair(0..1, (1..2)*(2..3)).

Correct!

- (●) 8
- ( ) 16
- ( ) 2
- ( ) 4

Question 6

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.

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

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

Correct!

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

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

Question 7

1 / 1 pts

Which option is equivalent to the following clingo program?

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

p(1;2, 1;2).

Correct!

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

p(X, X**|X-Y|) :- X=1..2, Y=2..3.

p(X,Y) :- X=1..2, Y=1..X.

Question 8

1 / 1 pts

Which of the statements about the following clingo program Π is true?

a :- not b.

b :- not a.

The models of the propositional image of Π happen to be the same as the stable models of Π.

{a, b} is a stable model of Π

∅ (i.e., empty set {}) is a model of the propositional image of Π.

Correct!

The minimal models of the propositional image of Π happen to be the same as the stable models of Π.

Question 9

1 / 1 pts

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

p(a;b).

a.
b.

a :- not a.
b :- not b.

Correct!

a :- not b.
b :- not a.

Question 10

1 / 1 pts

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

Correct!

- (•) True
- ( ) False

Quiz Score: **10** out of 10