2020-2021 1-GS Methods in AI research (INFOMAIR)
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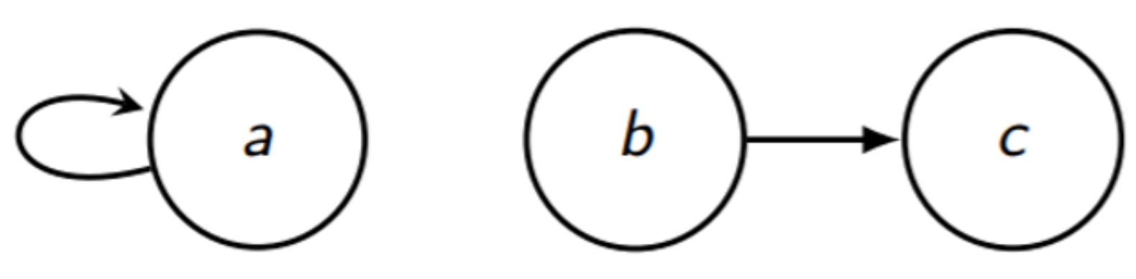
Review Test Submission: Quiz Lecture14 + L11&L12 revisited

User	Otto Mättas
Course	2020-2021 1-GS Methods in AI research (INFOMAIR)
Test	Quiz Lecture14 + L11&L12 revisited
Started	11/4/20 6:15 PM LATE
Submitted	11/4/20 6:20 PM LATE
Due Date	10/21/20 6:00 PM
Status	Needs Grading
Attempt Score	Grade not available.
Time Elapsed	5 minutes
Instructions	This quiz tests understanding of some concepts from the logic part of Lecture 14 (Formal argumentation) and it briefly revisits the lectures from the previous week (Knowledge based systems and Description logics). It is not a full representation of all the material covered. The quiz should be completed before 21 October at 18:00 (Dutch time), in which case the answers will be taken into account when preparing the live session of this week.
Results Displayed	All Answers, Submitted Answers, Correct Answers, Feedback, Incorrectly Answered Questions

Question 1

Needs Grading



Consider the argumentation graph depicted above (note that **a** is a self-attacking argument). Find all grounded, preferred and stable extensions.

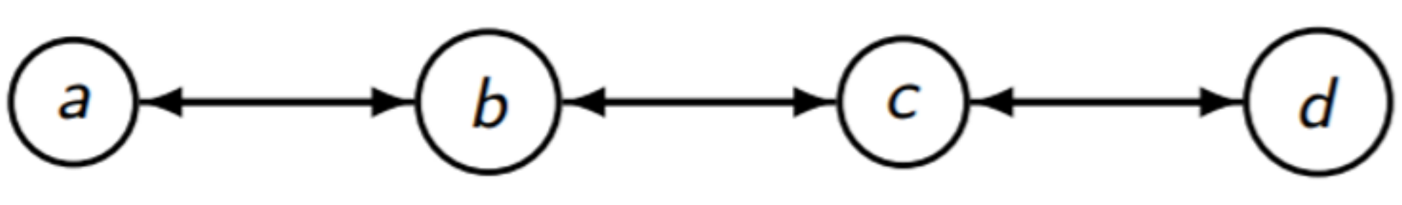
Selected Answer: Grounded: B
Preferred: BC
Stable: BC

Correct Answer: Grounded: {b}
Preferred: {b}
✓ Stable: do not exist

Response Feedback: [None Given]

Question 2

10 out of 10 points



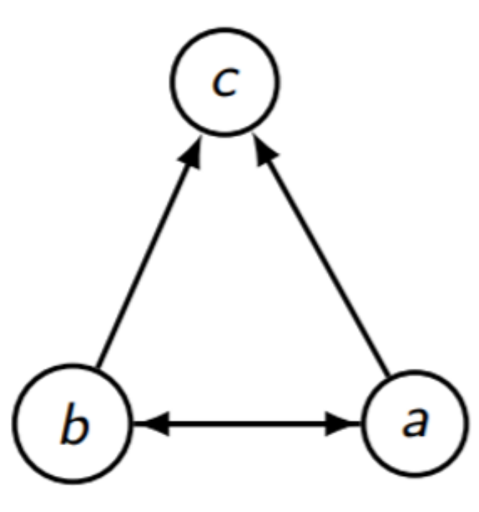
Consider the argumentation graph depicted above. One of the following sentences is true. Which one?

Selected Answers:
✓ there are 6 complete extensions, and 3 of them are preferred

Answers:
there are 4 complete extensions, and 2 of them are preferred
✓ there are 6 complete extensions, and 3 of them are preferred
there are 5 complete extensions, and they are all preferred
there are 3 complete extensions, and they are all preferred

Question 3

10 out of 10 points



Consider the argumentation graph depicted above. Under Preferred semantics, which of the following sentences is true?

Selected Answer: ✓ both **a** and **b** are credulously justified

Answers:
all three arguments are either credulously or sceptically justified
all three arguments are indefensible
either **a** or **b** is sceptically justified
✓ both **a** and **b** are credulously justified

Question 4

0 out of 10 points

Using the knowledge base

K={p,q,r}

and the rule-base

$R=\{r_1:p\Rightarrow a,\ r_2:q\Rightarrow b,\ r_3:r\Rightarrow c,\ r_4:\neg b\Rightarrow\neg c,\ r_5:c\Rightarrow\neg a\}$, it is not possible to construct an argument whose conclusion is:

Selected Answer: ✗ ¬a

Answers:
a
¬a
c
✓ ¬c

Question 5

Needs Grading

Using the knowledge base

K={p,q,t}

and the rule-base

$R=\{r_1:p\Rightarrow s,\ r_2:q\Rightarrow\neg s,\ r_3:q,t\Rightarrow\neg n(r_1)\}$, we can construct the arguments

A_1: p

A_2 : $A_1\Rightarrow s$

B_1: q

B_2 : $B_1\Rightarrow\neg s$

C: t

D: $B_1,C\Rightarrow\neg n(r_1)$

Find all the attacks between those arguments. For each attack determine its type (rebut/undercut/undermine).

Selected Answer: [None Given]

Correct Answer: From A_2 to B_2 - rebut
From B_2 to A_2 - rebut
From D to A_2 - undercut
✓

Response Feedback: [None Given]

Question 6

0 out of 10 points

Consider a FO language that contains the constant symbol *UU* (that stands for Utrecht University), the unary relation symbol *Tea* and binary relation symbols *StudiesAt* (*StudiesAt(x,y)* means that *x* studies at *y*) and *Drinks* (*Drinks(x,y)* stands for *x* drinks *y*). Select the correct translation of the sentence

There is a student of Utrecht University which does not drink any tea.

to FOL.

Selected Answer: ✗ $\exists x(Student(x,UU)\rightarrow\neg\exists y(Drinks(x,y)\wedge Tea(y)))$

Answers:
✓ $\exists x(Student(x,UU)\wedge\neg\exists y(Drinks(x,y)\wedge Tea(y)))$
$\exists x(Student(x,UU)\rightarrow\neg\exists y(Drinks(x,y)\wedge Tea(y)))$
$\exists x(Student(x,UU)\wedge\neg\exists y(Drinks(x,y)\rightarrow Tea(y)))$
$\exists x(Student(x,UU)\wedge\neg\exists y(Drinks(x,Tea(y))))$

Question 7

Needs Grading

Is it following DL statement valid? Please provide a short explanation.

$\exists r.C\subset\forall r.C$

(here we use ⊂ for the subsumption symbol)

Selected Answer: [None Given]

Correct Answer: ✓
No. Consider an interpretation ***I*** which contains an element which is not in relation $\mathbf{r}^{I}$ with any element of $\mathbf{C}^{I}$

Response Feedback: [None Given]

Question 8

Needs Grading

Are any aspects of the lecture material unclear, or do you have follow-up questions about this?

If I have your feedback in time and if there is sufficient time to do so, I will try to address this during the live lecture that is associated with this question.

Leave this blank if you do not have any questions.

Selected Answer: [None Given]
Correct Answer: [None]
Response Feedback: [None Given]

Question 9

Needs Grading

Do you have a question about any *exercise* from the

- list of exercises (posted on BB - reasoning part)

or

- the slides (Argumentation)?

Selected Answer: [None Given]
Correct Answer: [None]
Response Feedback: [None Given]

Wednesday, November 4, 2020 10:32:50 PM CET

← OK