

# Logic for AI - Class Assignment # B: Argumentation

## Correction of the exercises

### 1. Extensions



complete extensions:

$\{a\}, \{b\}, \emptyset$

grounded extensions:

$\emptyset$

preferred extensions:

$\{a\}$  and  $\{b\}$



complete extensions:

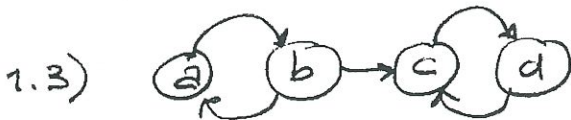
$\{a, c\}, \{b\}, \emptyset$   ~~$\{a\}$~~

grounded extensions:

$\emptyset$

preferred extensions:

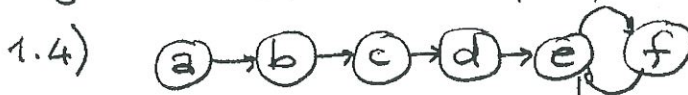
$\{a, c\}, \{b\}$



complete extensions:  $\{a, c\}, \{b, d\}, \emptyset$

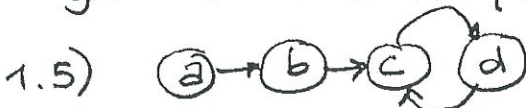
grounded extension:  $\emptyset$ ; complete preferred extensions:  $\{a, c\}, \{b, d\}$

~~$\{a, d\}$~~ ,  ~~$\{b, c\}$~~ ,  ~~$\{a\}$~~



complete extensions:  $\{a, c, e\}, \{a, c, f\}, \{a, c\}$

grounded extension:  $\{a, c\}$ ; preferred extension:  $\{a, c, e\}, \{a, c, f\}$



complete extensions:  $\{a, c\}, \{a, d\}, \{a\}$

grounded extension:  $\{a\}$ ; preferred extensions:  $\{a, c\}, \{a, d\}$

### 2. Labelings

2.1)

	1	2	3
a	IN	OUT	U
b	OUT	IN	U

↑ preferred extensions

↑ grounded extension

complete extensions

2.2)

	1	2	3
a	IN	OUT	UNDEC
b	OUT	IN	UNDEC
c	IN	OUT	UNDEC

2.3)

	1	2	3	4	5	6
a	IN	OUT	UNDEC	IN	IN	UNDEC
b	OUT	IN	UNDEC	OUT	OUT	UNDEC
c	IN	OUT	UNDEC	OUT	UNDEC	OUT
d	OUT	IN	UNDEC	IN	UNDEC	IN

2.4)

	1	2	3
a	IN	IN	IN
b	OUT	OUT	OUT
c	IN	IN	IN
d	OUT	OUT	OUT
e	IN	OUT	UNDEC
f	OUT	IN	UNDEC

2.5)

	1	2	3
a	IN	IN	IN
b	OUT	OUT	OUT
c	IN	OUT	UNDEC
d	OUT	IN	UNDEC