Phi 270 F96 quiz 6 (of 6) in pdf format

Analyze the following sentences in as much detail as possible, providing a key to the non-logical vocabulary (upper and lower case letters) appearing in your answer.

1. *Ned has visited a museum in Linden*. [Give this analysis also using an unrestricted quantifier.]
[answer]

2. *Something blocked each route*. [This sentence is ambiguous. Analyze it in two ways, as making a claim of *general exemplification* and as making the stronger claim of *uniformly general exemplification*, and indicate which analysis is which.]
[answer]

3. *At most one plan was implemented*.
[answer]

Analyze the sentence below using each of the two ways of analyzing definite descriptions. That is, analyze it using Russell's analysis of definite descriptions as quantifier phrases and then analyze it again using the description operator.

4. *The scout you saw saw you*.
[answer]

Use derivations to show that the following argument is valid. You may use any rules.

5.
$$\frac{\begin{array}{c}\exists x\ Rax \\ (\forall x\colon \exists y\ Ryx)\ Fx\end{array}}{\exists x\ Fx}$$
[answer]

Use a derivation to show that the following argument is not valid and describe a structure dividing an open gap.

6.
$$\frac{\begin{array}{c}\exists x\ Fx \\ Ga\end{array}}{(\exists x\colon Fx)\ Gx}$$
[answer]

Complete the following to give a definition of entailment in terms of truth values and possible worlds:

7. A sentence ϕ is entailed by a set Γ if and only if ...
[answer]

Describe a structure (i.e., an assignment of extensions to the non-logical vocabulary) which makes the following sentences all true. (You may present the structure either using tables or, where possible, using diagrams.)

8. a = b, fb = fc, Pa, ¬ P(fa), Rab, ¬ Rbc, Rb(fb)
[answer]

[This question was on a topic not covered in F04] Give two different restatements of the sentence below in expanded form as a complex predicate (i.e., a lambda abstract) applied to a term.

9. Fa ∧ Ga
[answer]

Phi 270 F96 quiz 6 answers

1. *Ned has visited a museum in Linden*
(∃x: x *is a museum in Linden*) *Ned has visited* x
(∃x: x *is a museum* ∧ x *is in Linden*) *Ned has visited* x

(∃x: Mx ∧ Nxl) Vnx
∃x ((Mx ∧ Nxl) ∧ Vnx)

[M: λx (x *is a museum*); N: λxy (x *is in* y); V: λxy (x *has visited* y); l: *Linden*; n: *Ned*]

2. *general exemplification*

(∀x: x *is a route*) *something blocked* x
(∀x: Rx) ∃y y *blocked* x

(∀x: Rx) ∃y Byx

uniformly general exemplification

∃y y *blocked each route*
∃y (∀x: x *is a route*) y *blocked* x

∃y (∀x: Rx) Byx

[B: λxy (x *blocked* y); R: λx (x *is a route*)]

3. *At most one plan was implemented*
¬ *at least two plans were implemented*
¬ (∃x: x is a plan) (∃y: y is a plan ∧ ¬ y = x) (x *was implemented* ∧ y *was implemented*)

¬ (∃x: Px) (∃y: Py ∧ ¬ y = x) (Ix ∧ Iy)

[I: λx (x *was implemented*); P: λx (x *is a plan*)]

4. *using Russell's analysis:*

the scout you saw is such that (*he or she saw you*)
(∃x: x *and only* x *is a scout you saw*) Sxo
(∃x: x *is a scout you saw* ∧ (∀y: ¬y = x) ¬ y *is a scout you saw*) Sxo

(∃x: (Tx ∧ Sox) ∧ (∀y: ¬y = x) ¬ (Ty ∧ Soy)) Sxo

using the description operator:

the scout you saw saw you
S(*the scout you saw*)o
S(ι x x *is a scout you saw*)o
S(ι x (x *is a scout* ∧ *you saw* x))o

S(ι x (Tx ∧ Sox))o

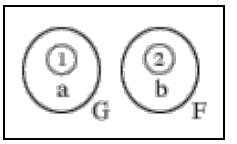
[S: λxy (x *saw* y); T: λx (x *is a scout*); o: *you*]

5.

	∃x Rax	1
	(∀x: ∃y Ryx) Fx	b:3
	ⓑ	
	Rab	(2)
2 EG	∃y Ryb	X, (3)
3 SB	Fb	(4)
4 EG	∃x Fx	X, (5)
	•	
5 QED	∃x Fx	1
1 PCh	∃x Fx	

6.

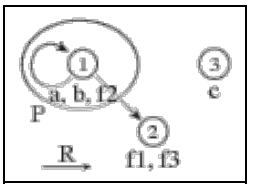
	∃x Fx	1
	Ga	(4)
	ⓑ	
	Fb	(3)
	(∀x: Fx) ¬ Gx	b:3, a:4
3 SB	¬ Gb	
4 SC	¬ Fa	
	○	¬Fa, Fb, Ga, ¬Gb ⇏ ⊥
	⊥	2
2 NcP	(∃x: Fx) Gx	1
1 PCh	(∃x: Fx) Gx	



7. A sentence ϕ is entailed by a set Γ of sentences if and only if there is no possible world in which ϕ is false while each member of Γ is true.

8.

```
                range: 1, 2, 3  τ | fτ   τ | Pτ   R | 1 2 3
alias sets                     ---|----  ---|----  ---|-------
1: a, b          a b c          1 | 2     1 | T     1 | T T F
2: fa, fb, fc -------           2 | 1     2 | F     2 | F F F
3: c             1 1 3          3 | 2     3 | F     3 | F F F
```



9. [This question was on a topic not covered in F04] The following are 4 possibilities (up to choice of the variable) from which your two might be chosen; in the last, τ may be any term:

[λx (Fx ∧ Gx)]a
[λx (Fx ∧ Ga)]a
[λx (Fa ∧ Gx)]a
[λx (Fa ∧ Ga)]τ