Module 7 Graded Quiz

Due Apr 24 at 11:59pm **Points** 10 **Questions** 10
Available Mar 31 at 12:59am - Apr 24 at 11:59pm
Time Limit 300 Minutes **Allowed Attempts** 3

This quiz was locked Apr 24 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	3 minutes	10 out of 10

Score for this attempt: **10** out of 10
Submitted Apr 21 at 1:34pm
This attempt took 3 minutes.

Question 1

1 / 1 pts

Consider the following TBox.

$\forall R.A \sqsubseteq \exists R.C$

Which option is the First-Order formula that is translated from this TBox?

Correct!

- $\forall x(\forall y(R(x,y) \rightarrow A(y)) \rightarrow \exists y(R(x,y) \wedge C(y)))$
- $\forall y(R(x,y) \wedge A(y)) \rightarrow \exists y(R(x,y) \wedge C(y))$
- $\forall y(R(x,y) \wedge A(y)) \rightarrow \exists y(R(x,y) \wedge C(y))$
- $\forall y(R(x,y) \rightarrow A(y)) \rightarrow \exists y(R(x,y) \wedge C(y))$

Question 2

1 / 1 pts

Which option **entails** the following TBox?

$\forall R.A \sqsubseteq \exists R.B$

Correct!

- $\exists R.B$
- $\exists R.A$
- $A \sqsubseteq B$
- $\forall R.A$

Question 3

1 / 1 pts

Consider the following ALC concepts.

hasChild(Joe, Ahn)

hasChild(Joe, Eva)

hasChild(Joe, Mary)

≤2 hasChild(Joe)

Which option is correct?

- It is a TBox and is satisfiable.
- It is an ABox and is not satisfiable.
- It is a TBox and is not satisfiable.

Correct!

- It is an ABox and is satisfiable.

Question 4

1 / 1 pts

Which kind of reasoning in ontologies should you use if you are asked “whether Barack’s last name is Obama” with some knowledge about Barack?

- Answering concept queries
- Concept satisfiability
- Taxonomies
- Instance checking

Correct!

Question 5

1 / 1 pts

Which option is a suitable ALC concept in description logic for the class of humans “pet owner who only owns cat”, using the following concept names and role name?

concept names: Person, Cat, Animal

role name: owns

- Person ⊓ Cat ⊓ owns(Person, Cat)
- Person ⊓ owns(Person, Cat)
- Person ⊓ ∃owns.Animal ⊓ ∀owns .Cat
- Person ⊓ ∀owns .Cat

Correct!

Question 6

1 / 1 pts

Which option about the use of ontologies in industrial applications is correct?

- YAGO2 is built by a team of trained ontology engineers who organize the ontology and write the axioms.
- CYC is different from DBpedia in the sense that it emphasizes on individuals, not general knowledge about various domains.
- WordNet is a knowledge graph and also an ontology constructed by human experts.

Correct!

- The relationship between entities is represented by typed edges in a knowledge graph.

Question 7

1 / 1 pts

Which option is correct about RDFS?

- “is taught by” is a subclass of “involves”

Correct!

- Instances of a class inherit the properties of that class.
- The class hierarchy is a binary tree.
- “Only humans can teach a class” can be guaranteed by range restriction.

Question 8

1 / 1 pts

Using the following concept names and role names, which option can correctly capture the knowledge “drivers of cars are adults”?

concept names: Person, Car, Adult

role names: controls

- Person ⊓ controls.Car ⊓ Adult
- Person ⊓ ∃controls.Car ⊑ Adult

Correct!

- Adult ≡ Person ⊓ ∀controls.Car
- ∀controls.Car ⊑ Adult
- Adult ⊑ Person

Question 9

1 / 1 pts

Using the following concept names and role names, which option can correctly capture the knowledge “cars have between three and four wheels”?

concept names: Car, Wheel

role names: hasPart

- Car ⊑ (≥3 hasPart.Wheel) ⊓ (≤4 hasPart.Wheel)

Correct!

- Car ⊑ (3 ≤ hasPart.Wheel ≤ 4)
- Car ⊓ ∀hasPart.Wheel ⊑ Wheel ≥ 3 ⊓ Wheel ≤ 4

Car ≡ (≥3 hasPart.Wheel)

Car ≡ (≤4 hasPart.Wheel)

Question 10

1 / 1 pts

Which of the following statements is correct?

A ⊓ ∃r.B is subsumed by A ⊓ ∃r.⊥

Correct!

A⊓¬A is subsumed by B

B is subsumed by A⊔¬B

A ⊓ ∃r.(B⊔C) is subsumed by A ⊓ ∃r.B

Quiz Score: **10** out of 10