



## Quiz 8

Please enter your Full Name:

**1: In Typed Lambda Calculus for computational semantics, nouns and verb phrases are usually "properties":  $(\text{Ind} \rightarrow \text{Bool})$ . Adjectives modify noun meanings, so they are usually of type  $(\text{Ind} \rightarrow \text{Bool}) \rightarrow (\text{Ind} \rightarrow \text{Bool})$ . What is the type of "very" in "very cute", if we want "very cute" to come out as the same type of "cute"?**

- $(\text{Ind} \rightarrow \text{Bool})$
- $(\text{Ind} \rightarrow \text{Bool}) \rightarrow \text{Bool}$
- $(\text{Ind} \rightarrow \text{Bool}) \rightarrow (\text{Ind} \rightarrow \text{Bool})$
- $((\text{Ind} \rightarrow \text{Bool}) \rightarrow (\text{Ind} \rightarrow \text{Bool})) \rightarrow ((\text{Ind} \rightarrow \text{Bool}) \rightarrow (\text{Ind} \rightarrow \text{Bool}))$
- None of the above

**2: In Typed Lambda Calculus, which of the following operations is "renaming of variables"?**

- lambda extraction
- beta reduction
- eta reduction
- alpha reduction
- None of the above

**3: Which of the following is the definition for "polysemy"?**

- Two senses of a word that do not have particular relations between them, for example, the "financial institution" and "sloping mound senses" of "bank."
- Two senses of a word that are related semantically, for example, the "financial institute" and "the building belonging to a financial institution" senses of "bank."
- Two senses of two different words that are (nearly) identical.
- Two senses of two different words that are opposite to each other.
- None of the above

**4: Which of the following is an example for "meronymy"?**

- couch/sofa
- mango/fruit
- fast/slow
- wheel/car

**5: Which of the following word pairs, A/B, has A as a hyponym of B?**

- Washington/The United States
- soda/Pepsi
- Java/programming language
- wheel/car
- None of the above

**6: Which of the following below words, if removed, makes the remainder a synset?**

- Superordinate
- Hypernym
- Meronym
- Superclass
- None: the four above words already represent a synset.

**7: Each of the following pairs contains a question and an answer that was retrieved by a certain method. Of the methods used, which uses abductive inference?**

- Q: "When did the Wright Brothers first fly?"  
A: "The Wright Brothers' first plane was launched in 1903." by recognizing "fly -> flight -> plane"
- Q: "When did the Wright Brothers first fly?"  
A: "The Wright Brothers flew in 1903." by recognizing the bigram "in 1903" from a large set of search results.
- Q: "When was the Wright Brothers' first flight?"  
A: "The Wright Brothers first flight was in 1903." by using custom rewriting rules for "when was" questions and searching for the permutations.
- Q: "When was the Wright Brothers' first flight?"  
A: "The Wright Flyer first flew on December 17, 1903." by weighing and combining various high-scoring N-grams in the sentences such as "the Wright" "first flew" and "1903."

**8: Which of the following is most like a frame (as opposed to a synset, hyponym/hypernym set, etc.)?**

- gas, petrol, oil, fuel, gasoline
- mouse, GUI, keyboard, monitor, speakers
- sedan, car, vehicle, mode of transportation, thing
- levity, happiness, mirth, joy, joviality