FINAL EXAMINATION PAPER

SEMANTICS · SUMMER SEMESTER 2025 · MITROVIĆ · HU BERLIN

This paper is weighted at 100%
of the final aggregate mark for this course.

THIS PAPER CONTAINS
THREE SECTIONS.
EACH SECTION CONTAINS THREE PROBLEMS.
ACCOMPANYING MATERIAL IS PROVIDED AT THE
END OF THE PAPER IN THE APPENDIX.

SECTION I: SOLVE ALL OF PROBLEMS IN THAT SECTION.

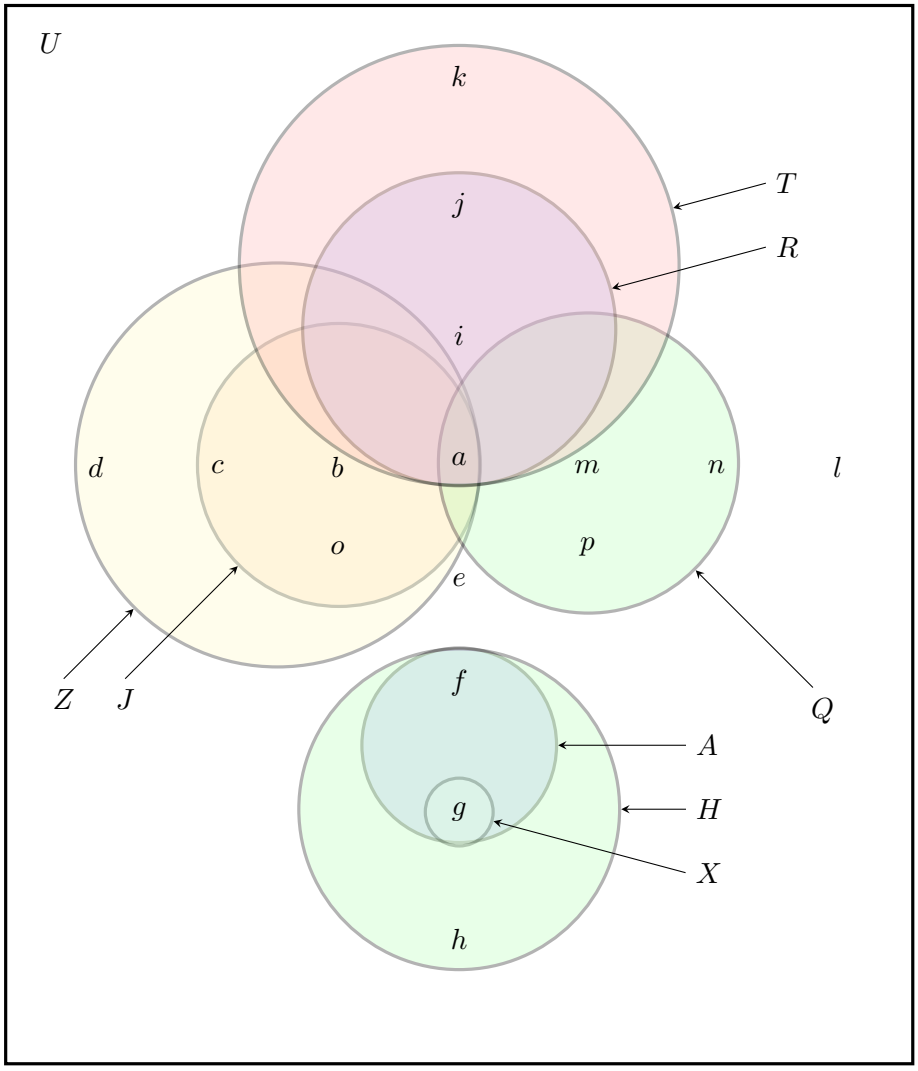
SECTION II: SOLVE AT LEAST ONE OF PROBLEMS IN THAT SECTION. IF YOU SOLVE MORE THAN ONE, THEN THE BEST SOLUTION WILL BE COUNTED.

SECTION III: THIS SECTION IS OPTIONAL: SOLVE ONE PROBLEM IN THAT SECTION.

THE DEADLINE FOR SUBMITTING
YOUR EXAMINATION PAPER IS
MIDNIGHT ON **AUGUST 24, 2025**.

Section I

Problem **1.1**: Consider the following Universe (U) with its sets and answers the three questions in (1)–(3) below.



(1) What are the following sets? List them.

a. $Q \cup R$
b. $T \setminus R$
c. $R \cap J$
d. $R \cup (X \cup \{l\})$
e. $Q \cup (A \cap H))$

f. $|J| + |Q \setminus T|$

(2) Are the following statements **T**rue or **F**alse?

a. $H \subset A$
b. $\forall x[R(x) \rightarrow T(x)]$
c. $\neg\exists z[Q(z) \wedge R(z)]$

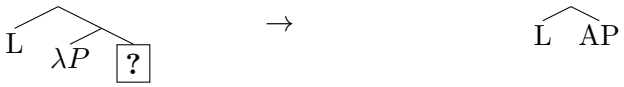
(3) For the following logical fragments, replace $\square$ with either $\in$ or $\notin$ to ensure the statement about U is correct.

a. $e \square \{A \cup H \cup X \cup Z \cup J \cup R\}^C$
b. $d \square J \cap Z$
c. $\emptyset \square U$

Problem **1.2**: A Berlin-based coffee company has mistakenly hired a graphic designer who convinced to launch with the logo that is typographically far from the desired effect they aim to project. As the evidence in Figure 1 shows, their intended acronym (abbreviation) is aimed to communicate **LAP**, allegedly meaning 'Life Among People', and not **L**λ**P**. Given the morphosyntactic structure in (4), reduce the λ-term so as to fix this design mistake. Your answer should contain nothing but the argument that saturates the λ-term, so as to return the fully saturated intended acronym. See Figure 1 (in the Appendix at the end of this document) for further context.

Solve for $\boxed{?}$ in (4) and sketch a brief, yet nearly trivial, reduction procedure.

(4)



Problem **1.3**: For each of the following words given in (5)–(10), pick the semantic type of the meaning they have given the sentential context they are used in (clarified by the 'as in' accompanying note under the repsective example). Pick from the following list (and deliver your answer as a pair, e.g. '**5A**'):

(**A**) e
(**B**) $\langle e, t\rangle$
(**C**) $\langle e, \langle e, t\rangle\rangle$
(**D**) $\langle e, \langle e, \langle e, t\rangle\rangle\rangle$
(**E**) $\langle\langle e, t\rangle, t\rangle$
(**F**) t
(**F**) none of the above

(5) **penguin**
↳ as in: 'Arabella is a penguin with rich parents'

(6) **Lucy Parsons**
↳ as in: 'Lucy Parsons was a black Cherokee woman who said: "You should never be deceived that the rich will permit you to vote away their wealth."'

(7) **John likes fried eels and beer whenever he's in Japan, even after having forgotten to book a hotel or charge his phone**
↳ as in: 'John likes fried eels and beer whenever he's in Japan, even after having forgotten to book a hotel or charge his phone'

(8) **fond (of)**
↳ as in: 'Beartato is fond of TS Eliot's poetry these days'

(9) **not**
↳ as in: 'Anarchy is not about the violance'

(10) **introduce**
↳ as in: 'Jimmy introduced Mille to Cecil.'

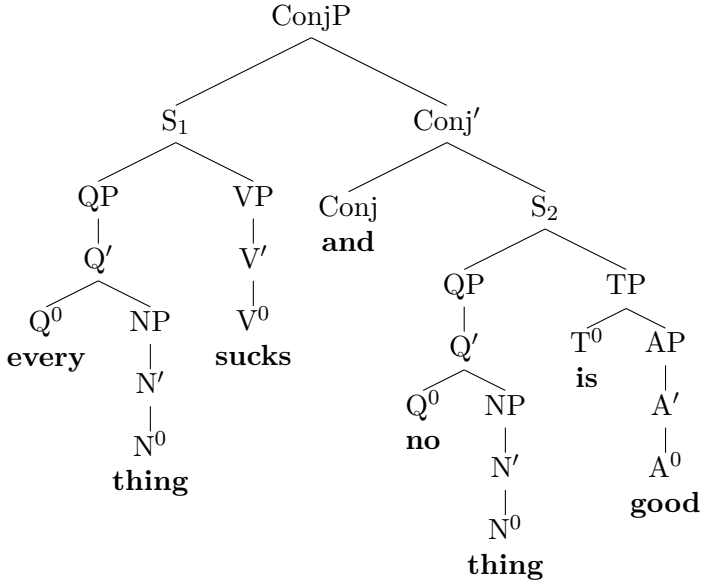
Section II

Provide a compositional semantic analysis for (at least one of) the following sentences. Each sentence to be analysed is accompanied with a structural representation of its syntactic structure Items listed under (c) provide additional assistance, if applicable. Feel free to follow whichever means or style of conducting your anlaysis, as long as you ensure that the analysis you give is detailed and does not skip any steps or ignore any details.

Problem **2.1**: Analyse the following sentence, given its corresponding syntactic structure.

(11) a. Everything sucks and nothing is good

b.

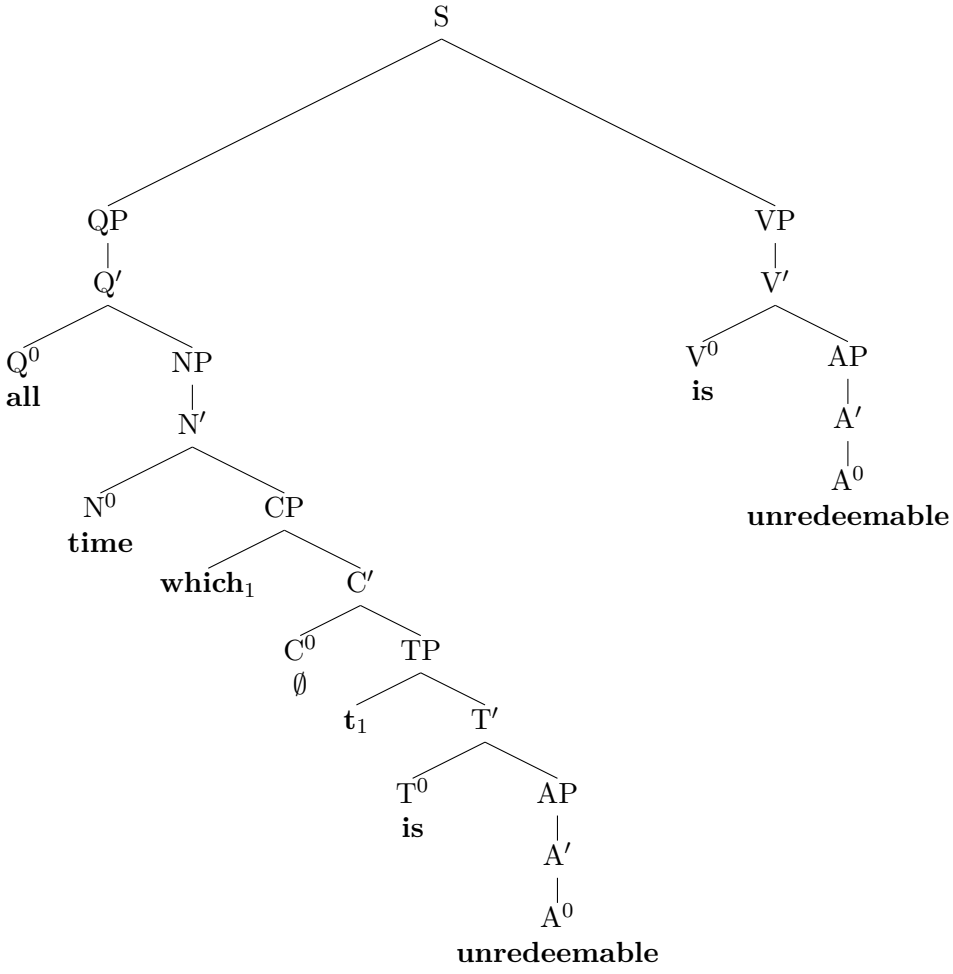


c. for the connective word *and*, take the following lexical entry:
$[\![\text{and}]\!] = \lambda p \in D_t \big[\lambda q \in D_t\ [p \wedge q]\big]$

Problem **2.2**: Analyse the following sentence, given its corresponding syntactic structure.

(12) a. All time, which is unredemable, is unredeemable.

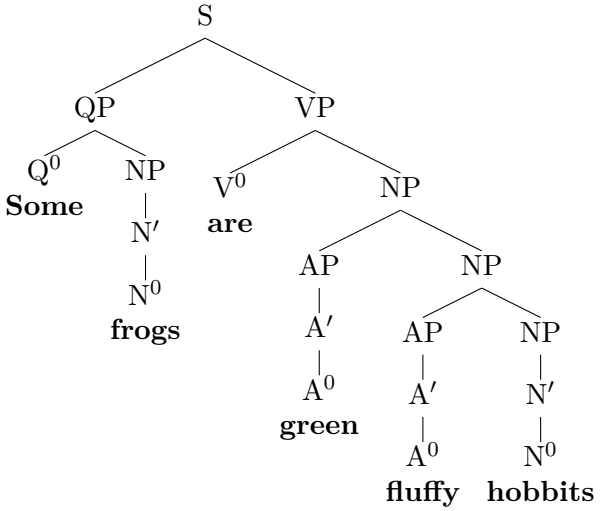
b.



Problem **2.3**: Analyse the following sentence, given its corresponding syntactic structure.

(13) a. Some frogs are green fluffy hobbits

b.



Section III

In no more than 2,000 words, respond to one of the theses stated below.

Problem **3.1**: Respond to the following thesis.

(14) There are no limits to compositional semantics. Discuss.

Problem **3.2**: Respond to the following thesis.

(15) We do not need set theory or any other mathematical mumbo-jumbo to talk about meaning in a meaningful way or, for that matter, construct a theory of meaning. We all know what we mean, after all. Discuss

Problem **3.3**: Respond to the following thesis.

(16) The Buddhist notion of *jijimuge* (16-a) and the general philosophical conception of *advaita* is a challenge for the set-theoretic foundations of our formal semantic theory. Discuss.

a. ji- ji- mu ge
thing thing NOT difference
"The radical interconnected of all things: for every x, and every y, while seemingly enurated as seperate, they are interconnected and indistinguishable."

— END OF PAPER —

Appendix

The accompanying graphical material is listed here.

(A) Evidence to the intended semantics of the branding

(B) The logo of the coffeeshop.

(C) An employee unaware of the tragic design their employer chose.

Figure 1. Evidence case for the LAP/LλP coffeeshop, caught in the act, selling coffee while parading an unsaturated elements in their core branding.

Figure 2. Lucy Parsons. See here for further anectodal details

Figure 3. Frogo Baggins.