Критерии оценивания и решения заданий заключительного этапа
по направлению «Лингвистика: теория языка»

Задания по направлению состояли только из инвариантной части. Для того, чтобы претендовать на статусы медалиста, дипломанта I, II, III степени, участникам необходимо набрать наибольшее число баллов за все задания.

Номер задания	Максимальный балл	Учёт в рейтинге по направлению
1. Interrogation Room Task	35	✓
2. Tee-to-tee-ta-too	65	✓

Задание 1.
Interrogation Room Task

To make sure that all prisoners have been interrogated, they should elect one person to be their *Counter*. The Counter is exactly the person who, at some point, can be sure that all prisoners have been interrogated, as required in the assignment.

Let us assume there are N prisoners, including the Counter.

a) In this case, the prisoners knew what was tap's initial position. Let us call it 1. Whenever it is set to 0, only the Counter can change it to 1. All other prisoners can change the tap's position only from 1 to 0, and they may do this only once (the first time they see it set to 1).

Each time the Counter is interrogated, (s)he will see the tap in either position 1 or 0. If (s)he sees it is set to 0, (s)he may conclude that one more prisoner has been interrogated. The Counter then changes the tap to 1. (S)he does not change it if (s)he sees it is set to 1 already.

To put it out in more detail:

If it is 1, the Counter concludes that no new prisoner has been interrogated between this and the previous interrogation of the Counter (in other words, either no one has been interrogated between the two interrogations of the Counter or all who have been interrogated had already been interrogated before. In this case, the Counter leaves the tap as it is.

When any prisoner other than the Counter is interrogated for the first time, and only if the tap is set to 1, (s)he will set the tap to 0. If this prisoner has already been interrogated, or if the tap is already set to 0, (s)he leaves it as it is.

This process continues until the Counter sets the tap from 1 to 0 N - 1 times. At that point, the Counter may conclude that all other prisoners have been interrogated, because each of them has already set the tap from 1 to 0. Since the number of interrogations is infinite, at some point this will happen.

b) The prisoners must choose a specific position for the Counter to count – let's say it's 0 (either vertical or horizontal). The Counter is the only one who can change the position from 0 to 1. The other prisoners are only allowed to change the position from 1 to 0 but exactly two times. All other rules remain the same.
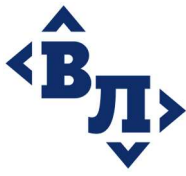
When the Counter counts 2(N-1) zero positions, it means that everyone has been to the interrogation room at least once. There are two possible scenarios:=
1. If the initial position was 0, then the Counter counted it and 2(N-1)-1 changes made by the prisoners. This implies that every prisoner, except one, changed the position of the tap twice, while one prisoner changed it only once.
2. If the initial position was 1, then the Counter counted 2(N-1) "real" changes, which means that every prisoner (except the Counter) changed the tap's position twice.
Since the number of interrogations is infinite, this will happen eventually.

Criteria
1. The first subtask was evaluated out of 15 points. A full score was awarded if the proposed idea was similar to the one presented in the solution.
2. The second subtask was evaluated out of 20 points. A full score was awarded if the proposed idea was similar to the one presented in the solution. However, if the proposed idea had slight variations that still met the conditions in the task (e.g., increasing the number of cycles from 2 to 3), it was considered correct.

Points were taken off if the proposed solution lacked sufficient detail or contained unclear claims. Solutions that ignored the task's conditions or attempted to introduce new ones received 0 points.
If the solution of the second subtask did **not** work in a specific case, some points were granted. However, if the solution works in a very specific case, points were not granted.

Задание 2.
Tee-to-tee-ta-too

a) In Russian, targets may agree in one or several of the following categories: gender, number and case (depending on the nature of the target). We know this from the agreement with targets other than =*то* (such as adjectives or verbs). If we assume that agreement of =*то* is based on the same categories (or some of them), we encounter a problem. Words with similar case, number, and gender values take different forms of the particle; e.g. *Ваня* (=*та*) and *отец* (=*от*), though both are masculine nouns in nominative singular. Based on the other words that take =*ma*, it is feasible to suggest that the form of the particle depends not only on the values of the agreement categories but also on the phonological realization of the case-number suffix or the phonological form of the controller (which depends on the declension type). The most important evidence is that =*ma* appears on words ending in [a]. Agreement (see the discussion of the phenomenon of agreement in the assignment) may only take into account the values of the categories of the controller but not its form. (This is a violation of what is known as the principle of "phonology-free syntax", also known as Zwicky's principle). Thus, the main problem with this data is that the form of the particle is partly predicted by morphosyntax (category values, to which phonology cannot access) and partly by phonology (the form of the suffixes / controllers, to which morphosyntax cannot have access).
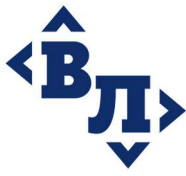
There are several possible approaches to resolving the issue, none of them fully satisfactory.

a) One solution is to assume that the declension type is also an agreement category relevant to syntax, not just a set of specific allomorphs of number-case markers. This would mean that the particle can agree not only in case, number and gender, but also in declension type. The solution is unsatisfactory. First, there is no independent evidence to support it (no other syntactic process takes into account declension type). Second, the grouping of the values of the categories of the controller in terms of the form of the particle they control does not make any paradigmatic sense (no patterns of homophony observed elsewhere in declension).

The intuition is, at least some choices of the form of the particle only make sense in phonological terms.

b) Let us thus look at phonology. There are some additional (to the obviously phonologically motivated use of =*ma*) cases that can also be interpreted phonologically. For instance, one could say that, in the first and second declension, the particle either copies the whole vowel of the ending or just the height feature (/e/ → /o/). Also, when the host ends with a consonant, the particle is realized as =*mo*, which may be described as metathesis =*m*V → =V*m*. This supports the intuition that the "agreement" is phonological rather than syntactic. However, this approach does not hold for the controllers of the third declension. The forms of the particle with third declension controllers are the same as those with first declension controllers, while the realization of the case-number markers is totally different, which suggests the form of the particle is chosen depending on the case-number-gender values of the controller, not its phonological form.

The intuition is, at least some choices of the form of the particle only make sense in morphological (case-number value) terms.

The best possible solution should incorporate both grammatical and phonological factors. It may be as follows: The particle has specific forms for feminine nouns, but for nouns of other genders, it is phonologically underspecified and adapts to the phonological form of the controller. This may seem an unusual solution, as phonetic underspecification is usually adopted in models with a more comprehensive scope over the morphology of a language (such as vowel harmony). In this case, processes similar to vowel harmony are applied to some forms of a morpheme but not its other forms. Yet, it is the best solution we are aware of, as it does not violate any important principles.

Criteria
1. The first subtask was evaluated out of 40 points.
2. The second subtask was evaluated out of 25 points according to the overall adequacy of the proposed alternative analyses.

In the first subtask, participants could earn 30 points if they correctly identified issues with the agreement analysis. If a participant simply rejected the **agreement** analysis providing a non-agreement alternative, they could only receive a maximum of 20 points. The goal was to work within the definition of agreement suggested in the assignment and discuss its underlying assumptions. Many participants only provided descriptions
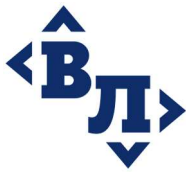
based on phonological copying, which often did not fully account for all the data and earned a maximum of 15 points.

Additionally, a clear and explicit formulation of the principle, whether through morphology/phonology-free syntax, Zwicky's principle, or simply a description without any special naming, was worth 10 points.

In the second subtask, a participant could earn a full score by proposing an analysis that effectively addressed the shortcomings of the agreement analysis presented in the first subtask. It was essential that the advantages of the proposed analysis over the agreement analysis were clearly articulated; otherwise, the analysis would receive a maximum of 10 points.

Participants proposed a wide range of different analyses, which were evaluated individually based on their overall theoretical and empirical adequacy. In addition to phonology and agreement, some participants suggested diachronic solutions, which were evaluated based on their explanatory power. However, most of these solutions did not account for what is the form of the particle with hosts such as *Ваня*.