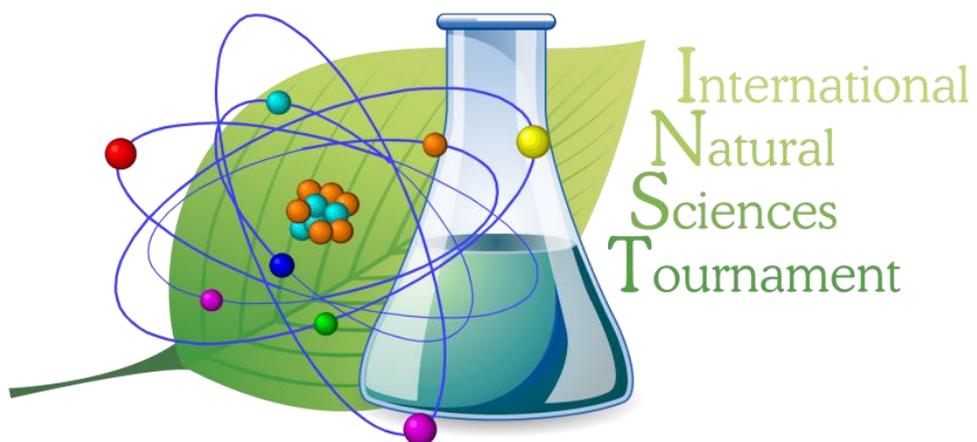


COMPETITION RULES & REGULATIONS

V International Natural Sciences Tournament



November 12–17 2014
St. Petersburg, Russian Federation

Part 1: General information about the tournament and its rules

1.1. The event aims to give students an idea of real industrial problems, and also to establish "student – company" communications for further cooperation. Participation in the tournament provides a unique opportunity to apply your fundamental knowledge to solving problems of a practical nature.

1.2. The organizer of the V International Student Natural Sciences Tournament (hereinafter – Tournament) is an initiative group of students, postgraduate students, graduates and professors of the Institute of Chemistry, St. Petersburg State University (www.chem.spbu.ru).

1.3. The organizing committee reserves the right to change the rules of this regulation in the case of changes in the number of participating teams or the conditions of the Tournament.

1.4. Teams participating in the Russian league of the Tournament should consist of 4–5 members and teams participating in the International league should consist of 3–5 members. Teams may be accompanied by a Mentor. A Mentor must have a degree in chemistry, physics, biology, medicine, or engineering sciences

1.5. The tournament is held in two rounds: an extramural and an intramural round.

1.6. During the extramural round teams must solve at least two of the three qualifying tasks proposed by the organizers.

1.7. The intramural round of the Tournament is held in three days: two qualifying days and the Final. For the first qualifying day teams are assigned to auditoriums according to the results of the Captain's Competition. 3 or 4 reports are made in each section (auditorium) during 1 cycle, depending on the number of teams in the section. In each cycle teams play each of the 3 roles: the Speaker, the Opponent, and the Reviewer once.

1.8. At the Tournament teams are given 15 tasks, at least 12 of which they have to solve (4 out of 5 tasks in each of the three units). Teams may turn down one problem in each block without losing points. To register a reject it is necessary to write down the number of the selected task from each unit in the Team's Passport immediately during registration prior to the Tournament.

1.9. During the two qualifying days each team member can only act once as Speaker, once as Opponent, and no more than twice as Reviewer. In the case of the participation of a team of 3 members in the International league one member of the team can act twice as Speaker and another member of the team can act twice as Opponent during the two qualifying days.

1.10. In the Final each team member can only act once as Speaker, once as Opponent, and no more than twice as Reviewer.

1.11. Winners of the team competition are determined as follows:

Team ranking. For teams that qualified for the Final, the score (the place that the team took) is determined only by the total points scored in the Final. For teams not qualified for the Final ranking is determined by the sum of scores from the two qualifying days.

The Russian League. By the results of the tournament the 3 highest ranking teams are determined. They receive gold, silver and bronze medals, respectively.

The International League. Half of the highest ranking teams (rounded down) receive medals.

1.12. During the *challenge*, use of literature, as well as any other information sources (laptops, tablets, e-readers, mobile phones, etc.) is prohibited.

Part 2: Key terms

The Speaker is a member of the reporting team that acts with a multimedia presentation and presents his teams solution of the task for 7–10 minutes. The Speaker is appointed by the team captain.

The Opponent is a member of the opposing team, who evaluates the solution of the Speaker within 5 minutes. The Opponent is appointed by the captain of the team opposing.

The Reviewer is a member of the reviewing team, who summarizes the work of the Speaker and the Opponent, points out the strengths and weaknesses of them both.

The Tournament Audience is everyone present in the section, except for the members of the teams, members of the Jury and team Mentors.

"Speaker–Opponent" Polemics is a sequence of interactions between the Speaker and the Opponent, which are a regimented response of the Speaker to the comments of the Opponent, the parrying of these responses by the last and so on. The time allowed for each of the participants to speak during Polemics is limited to 5 minutes and is fixed by the section host.

"Speaker–Opponent–Reviewer" Polemics is a sequence of interactions between the Speaker, the Opponent and the Reviewer, in which they answer and comment on each other's remarks, parry responses, etc. The time allowed for each of the participants to speak is not individually limited by a fixed amount of time. The total duration of the "Speaker–Opponent–Reviewer" Polemics is 5 minutes.

The response to the opposition is the reply of the Speaker to the remarks and comments of Opponent clarifying certain points of the solution but not the retelling of it. The response to the opposition lasts 3 min.

The Challenge is the whole sequence of actions in the discussion of a single task.

A Cycle is a complete round of challenges. If a section consists of 4 teams, then one cycle is 4 challenges long. In the case of a section consisting of 3 teams, a single cycle is 3 challenges long.

The Captain's Competition is a personal competition held between the team captains. The results of the Captain's Competition determine the order of role selection in the first cycle of the Tournament.

Winner of the Tournament are the teams awarded with medals of the Tournament.

Absolute winners and prizewinners of the Individual Tournament Competition are Tournament participants that receive absolute winner (1st degree) and prizewinner (2nd&3rd degree) diplomas of the individual competition (see part 18).

The Team Passport is a team's individual card, where reject tasks, as well as reported, opposed and reviewed tasks are marked, individual team member participation information is put down and also scores are recorded. During a single cycle the Team Passports are held by the Section Host.

Part 3: The Captains' Competition

3.1. The Captains' Competition is held before the tournament to assign each team a nominal number (for all teams of the Russian and International leagues at the same time). The nominal number determines the distribution of teams to auditoriums in the first cycle.

3.2. The vice-captain can participate in the Captains' Competition instead of the captain.

3.3. The results of the Captains' Contest do not affect the team's overall score in the tournament.

Part 4: Speaker rules

4.1. The team accepting a Challenge puts up one person (the Speaker), who tells his team's problem solution in free form in the given time of 7–10 minutes with the help of a multimedia presentation. Before beginning his report the Speaker must repeat the problem conditions. It is strongly recommended to submit presentations in MS PowerPoint 97–03 (* .ppt) or (* .pdf) format. * .pptx format is not recommended because using it may cause problems with the accuracy of the presentation's display (presentations of this format are not accepted). Illustrating the performance in the form of drawings on the blackboard or posters may be accepted in extreme cases but cannot be rated a full score.

4.2. If necessary, the Speaker is allowed to use his own notes (but not literature). In this case, the participant must show the notes to the head of the jury and receive permission.

4.3. The Speaker is recommended to hand out to the jury one printed copy of his presentation before beginning his speech. At the end of the report the Speaker should inform the jury and the Opponent that he has finished (by saying "The report is complete").

4.4. The Speaker should be very brief while answering the clarifying questions of the Opponent, questions of the jury and audience. An answer prolonged beyond measure can be interrupted at any time by the head of the jury or section host (with the consent of the jury).

4.5. The response to the opposition should be brief. The response may contain a certain clarification of the solution, in the parts pointed out by the Opponent, but not its retelling. Response to the opposition lasts no more than 2 minutes and can be interrupted by the head of the jury, or section host (with the consent of the jury) if this limit is exceeded or the topic of the report is avoided.

Part 5: Opponent rules

5.1. The opposing team can challenge the reporting team to any task, except:

- 1) those which the reporting team has officially rejected;
- 2) those that were already reported by the reporting team;
- 3) those that were already played in this cycle.

If all these rules make it impossible to challenge a team, then rule 3 is canceled for this challenge.

5.2. After the challenge has been accepted and the Speaker assigned by the captain of the reporting team, the captain of the opposing team announces the name of the opponent (by saying " *Full name of the team member* will be opposing").

5.3. The Opponent does not join the Speaker and stays with his team till the end of the Speaker's report. He can do whatever records and notes he wishes, without using literature and other sources of information.

5.4. After the end of the Speaker's report the Opponent can ask **clarifying** questions (no more than two). Questions should only explain unclear moments to the Opponent, without extending to the scope of the report. Questions that do not meet this requirement can be withdrawn by the head of the jury, or section host (with the consent of the jury). The Opponent can ask all questions that are not of specifying nature only during polemics. After getting answers to his questions from the Speaker, the Opponent has 1 minute to prepare the opposition.

5.5. The Opponent is given no more than 5 minutes to make his speech. **The main task of the opponent is to evaluate the solution proposed by the Speaker.** During his speech, the opponent must reasonably criticize the solution, find its weaknesses, point to incorrect statements, unfounded assumptions, logical errors, facts that have not been accounted for, misunderstandings of the conditions of the problem by the reporting team, etc. The Opponent may also acknowledge the most successful parts of the decision, but still must explain why they are significant. Based on this analysis, **the Opponent must conclude whether the problem was solved completely by the reporting team and to what extent it was solved.**

5.6. The Opponent should not make comments about the design of the presentation or judge the public speaking skills of the Speaker. The Opposition must only relate to the content of the challenge problem. During his speech, the opponent shouldn't retell his own decision. However, he can show his knowledge of the topic of discussion, by pointing to the effects, laws and other scientific aspects which the Speaker hadn't considered in his speech that should have been considered by the Speaker in accordance with the conditions of the problem.

5.7. At the end of his speech the Opponent must notify the jury and the Speaker that he has finished (by saying "The opposition is complete"). Upon rule violation the opposition may be interrupted by to the head of the jury or section host (with the consent of the jury).

5.8. During and after the Speaker's response to the opposition the Opponent must stay close to the Speaker to answer possible questions of the jury.

Part 6: Reviewer rules

6.1. The Reviewer gives a brief assessment of the speeches of the Speaker and the Opponent, determines how well they coped with their responsibilities, and analyzes the understanding of the problem under discussion by the Speaker and the Opponent. The Reviewer is given 3 minutes to make his speech.

6.2. The Reviewer should point out the weaknesses of the solution that had not been noticed by the Opponent, namely, incorrect statements, unfounded assumptions, conditions of the problem, which were not taken into account in the proposed decision, etc. The Reviewer also should pay attention to the unreasonable criticism of the report by the Opponent (if present).

6.3. The Reviewer should indicate the technical flaws of the presentation of the report itself.

6.4. In exceptional cases, if the Reviewer fully disagrees with the conducted opposition and believes that the Opponent did not cope with his task, he can take the role of the opponent for himself. The Reviewer is obliged to declare this before beginning his speech. In this case the Reviewer is obliged to conduct **the opposition** (see rules 5.5 5.7), as well as to **evaluate the Speaker and his presentation of the solution (as a reviewer)**. Speaking time in this case is increased to 5 minutes. Role substitution does not increase the maximum score that the Reviewer can receive (10).

Part 7: Polemics

7.1. "Speaker–Opponent" polemics is a contest between the Speaker and the Opponent, which aims to show how quickly the representatives of the teams can respond to the arguments of the opponent, their understanding of the scientific part of the problem under discussion, as well as their ability to competently defend their point of view.

7.2. "Speaker–Opponent–Reviewer" polemics is a contest between the Speaker, the Opponent, and the Reviewer.

7.3. The discussion of the polemics should consider only the problem solution proposed by the Speaker.

7.4. The beginning of the Polemics is declared by section host.

7.5. Each participant of "Speaker–Opponent" polemics is given exactly 5 minutes of speech time. The way of using the given time is up to the participant. The time usage of each polemics participant is strictly recorded by the section host or the counting commission of each section. After 5 minutes run out, the participant has no right to continue the debate.

7.6. In the "Speaker–Opponent–Reviewer" Polemics there are no individual time limits. The "Speaker–Opponent–Reviewer" Polemics is 5 minutes long.

7.7. Participants of the debate should express their criticism or arguments in a proper form. Incorrect behavior during Polemics influences the overall score for the debate.

Part 8: Speaker team scoring criteria

8.1 The Speaker team's total score is a sum of three components – the score for the solution of the problem, the score for the solution's presentation and the score for the Speaker himself. The maximum score is 30 points.

8.2. **The problem solution** presented by the Speaker is scored by the jury on a 10-point scale. This score consists of the following elements:

Review of open source information considering the problem: up to 2 points. The thoroughness and quality of reviewing relevant, mainly modern literature related to the topic of the problem is scored here. Please refer to original sources – books, articles, patents / copyright certificates, thesis abstracts, etc. Information resources used in the solution should be referred to at the bottom of the slide. The link should contain bibliographic references, including the title of

the work for articles, books, etc. or internet links for electronic resources. If the Speaker does not mark references in the course of the presentation, it is recommended to do so at the end of the presentation in a single “list of references” slide. It is recommended to search literature using such electronic libraries and resources, as: <http://www.scopus.com/>, www.sci-hub.org , <http://elibrary.ru/>, <http://eu.wiley.com/> , <http://www.sciencedirect.com/> , <http://www.webofknowledge.com/> , <http://t1.espacenet.com/>, <http://www1.fips.ru/>, <http://www.springer.com/> .

Originality of the solution: up to 2 points. In this case, the presence and the quality of your own original ideas or ideas that supplement or improve the well-known solution to this problem are scored. Pursuing excessive originality at the expense of functionality and rationality of the solutions is not welcome.

Working through of the proposed solution: up to 3 points. Here the attempts to verify the solutions actuality, as well as a review of the technical aspects of its practical application are scored. Examples of such work (depending on the task) may be to:

- Creating a scheme / model of the proposed process, installation, synthesis, etc.
- Calculations justifying the solutions actuality
- Experimental confirmation of the decision
- Economic evaluation of proposed ideas, their profitability

Analysis and evaluation of your own solutions: up to 3 points. In this case, the critical approach to your own decision, the consideration of the pros and cons of the solution, as well as the comparative characteristic of existing approaches with the proposed solution are scored. Drawbacks and limitations of the solution known to the team should be mentioned distinctly.

Additional downgrades are possible for:

- Factual errors and incorrect statements in the decision (1–3 points)
- Logic errors in the construction of the solution (1–2 points)
- Incomplete solutions that don't answer all the tasks stated in the problem (1–4 points)
- Idle solutions that are not applicable to the conditions of the problem (1–2 points)

Additional points can be scored for:

- Consideration of non-obvious, but important facts that affect the solution (1–2 points)

8.3. The presentation of the solutions is scored by the jury on 10-point scale. This score consists of the following elements:

Display of the scientific idea: up to 4 points. In this case the accessibility of the report to the listener, the relevance of diagrams, drawings, tables, and other pictorial elements of the report, the presence of definitions of specific terms. The basic idea of the solution should be clear from the presentation without any additional questions and clarifications.

The presentation's appearance: up to 3 points. In this case, the presentation's design and visual content is scored. Availability and functionality of the titles, signs, drawings, definition of abbreviations, references, slide numeration, etc. The presentation should have all the design elements necessary for understanding the report.

Logic and consistency of narration: up to 3 points. In this case, the interconnection between various parts of the report is scored, the credibility and clarity of the solving process, the availability and accessibility of the information needed for understanding the essence of the problem and the proposed solution.

Additional downgrades are possible for:

- Reading text from the sheet / from slides (1–3 points)
- Problems with the duration of the performance (1–2 points)

Additional points can be scored for:

- Additional demonstration of material to help the perception of the solution (1 point)
- Successfully finding a way to demonstrate the difficult-to-understand material (1 point)

8.4. **The speaker** himself is scored by the jury on the 10-point scale. This score indicates the level of the Speaker's competence and quality of him fulfilling his role. This score consists of the following elements:

Ability to answer questions, erudition and mastery of the material: up to 4 points. In this case, the scientific validity of the statements, the ability to think and properly use scientific terminology, the knowledge of the subject of the report, the answers to questions of the jury and the opponent are scored.

Ability to carry out the debate: up to 3 points. In this case, the ability to intelligently argue, ask questions to find weaknesses in the opponent's arguments, to listen to and to hear your opponent's questions and answer them appropriately is scored.

Oratory skills: up to 3 points. In this case, emotion, eloquence and persuasiveness of the overall performance are scored, as well as the correctness of phrase construction and word use.

Additional downgrades are possible for:

- Factual errors and incorrect statements during the debate and while answering questions (1–3 points)

- Logic errors (1–2 points)

- Incorrect behavior (1–2 points)

- Quiet or slurred speech (1 point)

Additional points can be scored for:

- Resourcefulness and the ability to hold the blow, pre-prepared answers to complex questions. (1–2 points)

Part 9 Opponent team scoring criteria

9.1 The Opponent team's total score is a sum of two components – the score for the opposition and the score for the Opponent himself. The maximum score is 20 points.

9.2. The Opposition is also scored by the jury on a 10-point scale. This score consists of the following elements:

Evaluation of the proposed solution: up to 2 points. In this case, the adequacy of the findings made by the Opponent considering the integrity and quality of the proposed solution are scored. The Opponent should clearly indicate whether the task is solved from his point of view.

Indication of the drawbacks of the solution: up to 4 points: The fullness and significance of the found shortcomings in the Speaker's solution are scored, the indication of the facts the Speaker left out. Do avoid excessive fault-finding and pointing out non-essential shortcomings.

Justification of criticism and statements: up to 4 points. In this case, the scientific validity of given criticism and solution analysis, the availability and quality of the arguments used to explain your point of view are scored. The opponent must be able to clearly and convincingly explain why he is not satisfied in the proposed decision.

Additional downgrades are possible for:

- Factual errors in the opposition (1–3 points)

- Logic errors in the course of opposition (1–2 points)

- Retelling your own decision (1–2 points)

- Problems with performance duration (1–2 points)

Additional points can be scored for:

- Consideration of the non-obvious, but important facts that affect analysis of the solution (1–2 points)

Part 10 Reviewer team scoring criteria

10.1 The reviewer team score entirely depends on the assessment of the Reviewer himself. The maximum score is 10 points.

10.2. The reviewer is scored by the jury on a 10-point scale. This score consists of the following elements:

Evaluation of the solution of the problem: up to 2 points. In this case, the adequacy and validity of the assessment made by the reviewer of the problem solution is scored, whether or not the jury agrees with it is also taken into account.

Evaluation of solution's presentation: up to 2 points. In this case, the adequacy and validity of assessment made by the reviewer of the solution's presentation is scored, whether or not the jury agrees with it is also taken into account.

Evaluation of the Speaker's work: up to 2 points. In this case, the adequacy and validity of assessment made by the reviewer of how well the Speaker fulfilled his duty is scored, whether or not the jury agrees with it is also taken into account.

Evaluation of the opposition: up to 2 points. In this case, the adequacy and validity of the assessment made by the reviewer of the opposition is scored, whether or not the jury agrees with it is also taken into account.

Evaluation of the Opponent's work: up to 2 points. In this case, the adequacy and validity of assessment made by the reviewer of how well the Opponent fulfilled his duty is scored, whether or not the jury agrees with it is also taken into account.

Additional downgrades are possible for:

- Factual errors and incorrect statements (1–3 points)
- Logic errors (1–2 points)
- Incorrect behavior (1–2 points)
- Quiet or slurred speech (1 point)

Additional points can be scored for:

- Resourcefulness and the ability to hold the blow (1–2 points)
- Answering questions and erudition (1–2 points)

If the reviewer takes the role of the Opponent, the score is based on the same five elements (*Evaluation of the solution of the problem, evaluation of solutions presentation, evaluation of the Speakers work, evaluation of the opposition, evaluation of the Opponents work*). It is assumed that the reviewer gave a very low score of the Opponent's work and for the opposition. Scores for the rest of the elements: *evaluation of the solution, its presentation and the Speaker's work*, are made based on the speech made by the reviewer as the Opponent.

Part 11 Tournament tables. The section distribution in the intermural round of the Tournament

11.1. According to the results of the Captains' Competition before the first qualifying round all the teams participating in the tournament are numbered from 1 to N, N-total number of teams participating in the respective tournament leagues. Number 1 is given to the team with the best result in the Captains' Competition. Teams are distributed to sections for the first cycle of the first round (qualifying day).

11.2. Within each round (2 qualifying days and the final) two competition cycles are held. That means that each team acts twice as the Speaker (S), twice as the Opponent (O) and twice as the Reviewer (R). In total each team plays 6 times (including the final stage).

11.3. The team with the best result in the section at the beginning of the cycle chooses the choice order (if the team wants to choose its role first, then it calls the number 1 if second – number 2, etc.). Next, the other teams choose numbers in descending order according to scores from the previous competition days. This rule applies only to the first cycles of each competition day.

- The best result at the start of *the first cycle* is considered to be the highest number of points scored in the Captains' Competition.

- The best result at the start of *the third cycle* is considered to be the most points scored by the team in the two cycles of the first qualifying round.

11.4. According to the choice order teams receive their role in the first challenge. After the first challenge the roles are change as shown in Table p. 11.5.

11.5. **The order of role-playing in a cycle** within one section. After defining the first role the next one goes in accordance with the tables:

Cycle 1

| | Challenge №1 | Challenge №2 | Challenge №3 | Challenge №4 |
|--------|--------------|--------------|--------------|--------------|
| Team 1 | S | O | R | – |
| Team 2 | – | S | O | R |
| Team 3 | R | – | S | O |
| Team 4 | O | R | – | S |

Cycle 2

| | Challenge №1 | Challenge №2 | Challenge №3 | Challenge №4 |
|--------|--------------|--------------|--------------|--------------|
| Team 4 | S | O | R | – |
| Team 3 | – | S | O | R |
| Team 2 | R | – | S | O |
| Team 1 | O | R | – | S |

In the case of there being three teams in the section within one cycle the role-playing order is as follows:

Cycle 1

| | Challenge №1 | Challenge №2 | Challenge №3 |
|--------|--------------|--------------|--------------|
| Team 1 | S | O | R |
| Team 2 | R | S | O |
| Team 3 | O | R | S |

Cycle 2

| | Challenge №1 | Challenge №2 | Challenge №3 |
|--------|--------------|--------------|--------------|
| Team 3 | S | O | R |
| Team 2 | R | S | O |
| Team 1 | O | R | S |

11.6. Tournament table for 16 teams.

This paragraph is an example tournament table for 16 teams: the distribution of teams to sections for qualifying and the final battles. In the case a different number of teams participating, there is a possibility of forming 3-team sections.

The first qualifying day

1st Cycle (Team's № = Position in captains' competition)

| 1 Section | | | | 2 Section | | | | 3 Section | | | | 4 Section | | | |
|-----------|---|---|----|-----------|---|----|----|-----------|---|----|----|-----------|---|----|----|
| 1 | 5 | 9 | 13 | 2 | 6 | 10 | 14 | 3 | 7 | 11 | 15 | 4 | 8 | 12 | 16 |

2nd Cycle (Team's reference number **does not change** and corresponds to the number in the first cycle)

| 1 Section | | | | 2 Section | | | | 3 Section | | | | 4 Section | | | |
|-----------|---|----|----|-----------|---|---|----|-----------|---|----|----|-----------|---|----|----|
| 4 | 8 | 12 | 16 | 1 | 5 | 9 | 13 | 2 | 6 | 10 | 14 | 3 | 7 | 11 | 15 |

The second qualifying day

3rd Cycle (Team's № = team rating based on the results of the first two cycles of the qualifying round)

| 1 Section | | | | 2 Section | | | | 3 Section | | | | 4 Section | | | |
|-----------|---|---|----|-----------|---|----|----|-----------|---|----|----|-----------|---|----|----|
| 1 | 5 | 9 | 13 | 2 | 6 | 10 | 14 | 3 | 7 | 11 | 15 | 4 | 8 | 12 | 16 |

4th Cycle (Team's reference number **does not change** and corresponds to the number in the third cycle)

| 1 Section | | | | 2 Section | | | | 3 Section | | | | 4 Section | | | |
|-----------|---|----|----|-----------|---|---|----|-----------|---|----|----|-----------|---|----|----|
| 4 | 8 | 12 | 16 | 1 | 5 | 9 | 13 | 2 | 6 | 10 | 14 | 3 | 7 | 11 | 15 |

11.7. The results of one cycle are calculated as the average score amongst all of the members of the jury in the section, based on a maximum of 60 points (30–report + 20–opposition and + 10–review).

Regardless of the number of teams in the section, the team gets 3 scores – for the report, the opposition and the review.

11.8. In the Russian league 3 or 4 teams (by decision of the jury of the tournament), that receive the highest scores in the two qualifying rounds (4 cycles in total) are permitted to the Final. In the International league 3 or 4 teams (by decision of the jury) are permitted. The winning team and prize-winners are determined based on the sum of the scores obtained in the Finals (2 cycles) of each league.

Part 12: Order of actions

Detailed steps during a single challenge are given in the table below:

| | |
|---|---------------|
| Captain of the challenging team (the opposing team) determines the number of the problem that they challenge the Speaker to (« <i>We challenge team *...* to problem № ...</i> ») | 1 min |
| Captain of the reporting team announces the Speaker's full name (« <i>(Full name) meets the challenge</i> ») | 0,5 min |
| Captain of the opposing team announces the Opponent's full name (« <i>(Full name) will be opposing</i> ») | 0,5 min |
| The Speaker's speech | Up to 10 min |
| The opponent's clarifying questions (no more than two) and answers to them | 1 min |
| Preparation of the opposition (with the team). Scoring in the blanks. | 1 min |
| The Opponent's speech | 5 min |
| Response to the opposition | 3 min |
| "Speaker–Opponent" polemics | 5+5=10 min |
| Reviewer's speech | 3 min (5 min) |
| "Speaker–Opponent–Reviewer" polemics | 5 min |
| Jury questions. Final scoring (in the blanks) | 5–7 min |
| Public scoring of the report solution, the presentation and the opposition | 1 min |
| Speeches of jury members, their comments on the problem, on the performance of the Speaker, the Opponent and the Reviewer. | 2 min |
| TOTAL | 50 min |

Part 13: Section hosts of the tournament

13.1 The task of the section host is to create conditions for the tournament to pass according to the regulations. A host is assigned to each section separately.

13.2. The host:

- Enforces the challenge rules and prevents their violation;
- Introduces the teams and the jury, announces the scores;
- Declares the tasks to which the Opponent cannot challenge the Speaker;
- Monitors the polemics and stops it if it becomes non-constructive;
- Monitors the behavior of the teams and does not allow teams to consult with outsiders;
- Passes the word to participants of the tournament, the jury and the audience if necessary.

Part 14: Team members and the rights of the captain

14.1. Teams participating in the tournament may consist of 4–5 participants in the Russian league and 3–5 participants in the International league. Teams must choose a captain and a vice captain. The team captain is the leader of the team during the tournament and is responsible for interacting with the organizing committee and jury on organizational matters. The position of the captain and vice-captain are finally determined and formalized in the Team's passports during registration on the first day of the Tournament.

14.2. The captain appoints the Speaker / Opponent / Reviewer of the task, coordinates the team during the tournament.

14.3. Only the captain has the right to draw the attention of the host or jury to inappropriate behavior of the Speaker, Opponent or Reviewer.

14.4. During the captain's performance all his rights and responsibilities as a team leader are automatically passed on to the vice-captain for the time of that challenge.

14.5. The captain should make sure that the team stays quiet and organized during the performances. If the captain does not perform his duties or in the case of incorrect behavior of the captain, the host or the jury may ask replace the team captain for the duration of one cycle.

Part 15: The Russian and International leagues

15.1. All teams participating in the tournament are divided into the Russian and International leagues.

15.2. The Russian league consists of 17 teams who had ranked from 1 to 17 in the extramural round of the Russian league.

15.3. The International league consists of nine teams who had ranked from 1 to 9 in the extramural round of the International league.

15.4. All challenges of the Russian league are played in Russian.

15.5. All challenges to International league are played in English.

15.6. The remaining points of the tournament regulations are executed in the same way for both leagues, unless further stated.

Part 16 The Jury and the Scoring

16.1. The members of the jury of the Tournament can be valid PhDs (in chemistry, physics, biology, engineering and geological-mineralogical sciences), the captains of teams, which participated in the previous tournaments, members of teams that won previous tournaments, the representatives of science and technology or research companies with no less than 2 years' experience.

16.2. During each challenge, the jury scores the Speaker team for the solution of the problem, solution presentation and for the Speaker himself, the Opponent team for the opposition

for the Opponent himself and the Reviewer. The Counting Commission calculates the average scores for each of these components. Counting accuracy for average scores is 0.01 points.

16.3. When scoring the jury uses the criteria described in section 9, 10 and 11 of this Regulation.

16.4. Scoring is done on a special blank, separately for each item of each of the components. The total score is calculated after summing up the scores for all elements, including all penalties and bonuses. The total score cannot be less than 0 or greater than 10 points.

16.8. Winners of the tournament are determined by the total score for the 2 cycles of the final. Total score is in the range of 0–120 points.

16.9. In case of a tie, the highest rank is given the team that received a higher rating as a Speaker. In case of a tie after comparing the reports, the higher rating is given to the team that got a higher rating as the Opponent.

Part 17 Appeal

17.1 The speaker team or opponent team may appeal to the jury, if both of the following two conditions take place:

- Scores for the speaker or the opponent of any jury member deviates from the mean score of all the members of the jury more than 2.5 points upward or downward (hereinafter – "falls out").
- A member of the jury refused to comment on his scoring or the team finds this comment unconvincing

The team captain may notify the section host of their wish to appeal immediately after the announcement of scores and comments of the jury on the highest, lowest ratings and the challenge as a whole. After the end of the current challenge the request for an appeal will not be accepted.

17.2 Appeals are considered immediately after the end of the current cycle. To do so all members of the jury of this section, the host, the counting commission and the appealing team stay in the section. The team captain or Speaker / Opponent of this team discuss the disputed score and the reasons for it with the member of the jury. The correctness of speeches is controlled by the host. In case of improper behavior the team's appeal may be denied.

17.3 An appeal has three possible resolutions:

1) "The team agrees with the jury"

If during the discussion the appealing team agrees with the justification of the jury of its score, the captain should say so. Then the appeal is rejected, and the score remains the same.

2) "A member of the jury agrees with the team"

A jury member can change his score for the team in result of the discussion. If the team agrees with the score's change, the appeal is considered to be satisfied, and the corrected score is entered in the protocol of the counting commission and marked as such. If the team does not agree with the already revised score and the score will still fall under the "contestedness" criterion (deviates from the average not less than 2.5 points), the team has the right to express their disagreement to this. In this case, there is a transition to step 3.

3) "The agreement has not been reached"

If a member of the jury decides not to change his assessment, and the team still believes it is unfair, the remaining members of the jury by secret ballot (by simple majority) decide whether to leave the disputed score or discard it and not take it into account in calculating the total

average score. If there is an even number of remaining members of the jury, and the votes are equally divided, the scores is left as it is.

Part 18 Winners and Prize-winners of the Individual Tournament Competition

18.1. Winners of the individual tournament competition are determined based on the number of points scored by the participants as part of teams participating in the tournament.

18.2. Diplomas of **Winners** of the final stage of the individual competition are awarded to participants with the best results of their average scores in "Speaker", "Opponent" and "Reviewer" categories which are written in the Teams passport, categories "Problem solution", "Solutions Presentation" and "Opposition" are not taken into account.

The number of Winner diplomas of the final stage of the individual competition is determined at the meeting of the organizing committee of the tournament and the Jury. The maximum possible number of Winners is 10% of the total number of participants in the intermural round tour of the Tournament.

18.3. Diplomas of **Prize-winners** of the Individual Championship in the final stage of the tournament are awarded to participants with the best results of their average scores in "Speaker", "Opponent" and "Reviewer" categories which are written in the Teams passport, but were not determined as Winners of the tournament. The number of participants awarded with Prize-winner diplomas is determined at a meeting of the Organizing Committee and the Jury. The maximum possible number of winners is 20% of the total number of participants in the intermural round of the Tournament.