THE REGULATIONS OF THE INTERNATIONAL YOUNG PHYSICISTS' TOURNAMENT

I. The Young Physicists' Tournament (YPT)

is a competition among teams of high school students in their ability to solve complicated scientific problems, to present solutions to these problems in a convincing form and to defend them in scientific discussions "Physics Fights".

II The problems of the YPT.

The problems are formulated by the International Organizing Committee (IOC) and sent to the national committees of the YPT not late then in October. These problems may be used for the regional and national Tournaments. For composing the problems the meeting of the IOC is held in the host country.

III The participants of the YPT.

1. The national teams.
Any invited country may present one team. The host country and Russia as the originator of the Tournament equally may present two teams.
2. The teams of regions, towns, clubs, colleges.
The decision about participation of such a team may be taken by the Organizing Committee of the host country - the Local Organizing Committee (LOC) in consent with IOC.
3. The membership of the teams.
The YPT team is composed of five high school students. The high school graduates participate in the YPT in the year of their graduation. The participation of university students is not allowed. The Organizing Committee may allow participation of teams of four or three students. The composition of the team is not changed during the Tournament. The team is headed by the captain who is an official representative of the team during the Physics Fight (PF).
4. The team leader
The team is accompanied by two team leaders.

IV. The membership of the Jury.

The Jury is formed by the LOC. Scientists and professors of different countries are drawn in the Jury. Team leaders are also included in the Jury. Members of the Jury are distributed among the groups of teams by the LOC. The team leaders cannot be the members of the Jury in the groups where their teams participate.

V. The agenda of the YPT.

The International YPT is carried out in time determined by the LOC (in May - July) during eight to ten days. The teams participate in scientific discussions - Physics Fights:
  a) 3 Selective PF;
  b) Semifinal;
  c) Final.
The host country provides a cultural program for the participants

VI. The Physics Fight Regulations

Three or four teams participate in a PF (depending on the total number of teams). In the course of a Fight the members of a team communicate only with each other. Before the

beginning of a PF, the introduction of the Jury and the teams takes place. The Fight is carried out in three (or four) Stages. In each Stage, a team plays one of the three (four) roles: the Reporter, the Opponent, the Reviewer (the Observer). In the following Stages of the PF, the teams change their roles according to the role scheme:

Four teams PF					Three team PF			
Action					Action			
Team	I	II	III	IV	Team	I	II	III
1	Re	Obs	Rev	Opp	1	Rep	Rev	Opp
2	Opp	Re	Obs	Rev	2	Opp	Rep	Rev
3	Rev	Opp	Rep	Obs	3	Rev	Opp	Rep
4	Obs	Rev	Opp	Rep				

VII. The Stage regulations

The performance order in the Stage of a Selective or Semifinal PF:

The Opponent challenges the Reporter for the problem	1 min
The Reporter accepts or rejects the challenge	1 min
Preparation of the Reporter	5 min
Presentation of the report	10 min
Questions of the Opponent to the Reporter and answers of the Reporter	2 min
Preparation of the Opponent	3 min
The Opponent takes the floor	5 min
Discussion between the Reporter and the Opponent	5 min
Questions of the Reviewer to the Reporter and the Opponent and answers to the questions	2 min
Preparation of the Reviewer	2 min
The Reviewer takes the floor	3 min
Concluding remarks of the Reporter	2 min
Questions of the Jury and Grading	2 min

In the Final the procedure of challenge is omitted. The official languages of the International YPT are English and Russian. The Reporter makes the presentation in English. The presentation of the Opponent and the Reviewer and the discussion may be carried either in English or in Russian. In the latter case translation is necessary and the time of presentation is increased by a factor of 1.5

VIII. The teams performance in the Stage

The Reporter
presents the essence of the solution to the problem, attracting the attention of the audience to the main physical ideas and conclusions. It is desirable to show the pictures, diagrams, slides, photos prepared in advance, and to demonstrate some experiments if the problem is an experimental one

The Opponent
puts questions to the Reporter and criticizes the report, pointing to the inaccuracy and errors in the understanding of the problem and in the solution. The Opponent analyzes the advantages and drawbacks of both the solution and the presentation of the Reporter. The discussion of the Opponent should not become the presentation of his own solution. The Opponent can mention his own solution as a arguement. In the polemics, the solution presented by the Reporter is discussed

The Reviewer
presents a short estimation of the presentations of the Reporter and the Opponent

The Observer
participates in common discussion
Limitation of the number of presentations:
during one PF no member of the team may take the floor more than twice (brief remarks are not taken in account).

IX. The rules of challenge to the problem and of the rejection

1. Problems
All problems presented in the same PF should be different. A number of problems presented for each PF can be restricted by decision of LOC

2. Selective PF.
The Opponent may challenge the Reporter on any problem with the exception for the problem that:
   a) was presented in this PF;
   b) was presented by the Reporter earlier;
   c) was opposed by the Opponent earlier;
   d) was presented by the Opponent earlier.
If such a challenge cannot be made, the bans d), c), b) are successively removed in the given order. During all Selective PFs the Reporter may reject the challenge three times in total without penalty. For every subsequent rejection the coefficient of the Reporter (see item X) is diminished by 0.2. All the problems rejected by the Reporter are included in the Rejection List of the team and can be rejected without penalty in all selective PF.

3. Semifinal
In every semifinal group 10 problems are used, which are determined by the LOC according to the Rating List prepared by the participants. For it each team ascribes integer, but not equal 0, numbers to problems, that the sum of these numbers should equal 100. Rating List must be presented in two hours after results of selective PFs are announced. The Opponent may challenge the Reporter for any of the 10 problems. During the Semifinal PFs a Reporter may reject the challenge twice without penalty. For any subsequent rejection the coefficient of the Reporter diminishes by 0.2

4. Final
The teams choose any problem from the whole List of the problems for presentation. They should declare choosen problems in two hours after results of Semifinal PFs are announced. The order of priority in this choice is established in accordance with sequence of presentations in Final. If any team takes for the report the problem # 1 the Reporter has to formulate own version of this problem for the Opponent and the Reviewer in one hour after the procedure of the choice. The coefficient of the Opponent is 2 for any problem

X. The grading

After each Stage, the Jury rates the teams, taking into account all presentations of the members of the team, questions and answers to the questions, and participation in the discussion. The marks are transformed into grades and then into points with various coefficients for the Reporter, Opponent and Reviewer according to the scheme:

Mark	5+	5	5-	4+	4	4-	3+	3	3-
Grade	53	50	47	43	40	37	33	30	27

	Reporter	Opponent	Reviewer	Observer
Coefficient	3 or less	2 or 2,2	1,0	0

1st Selective Fight										
15 - 17 team Fights					18 - 20 team Fights					
Group	I	II	III	IV	V	I	II	III	IV	V	VI
Reporter	1	2	3	4	5	1	2	3	4	5	6
Opponent	6	7	8	9	10	7	8	9	10	11	12
Reviewer	11	12	13	14	15	13	14	15	16	17	18
Observer	16	17				19	20				

2st Selective Fight										
15 - 17 team Fights					18 - 20 team Fights					
Group	I	II	III	IV	V	I	II	III	IV	V	VI
Reporter	17	10	6	7	16	11	12	7	8	19	20
Opponent	9	14	15	11	8	16	17	18	13	9	10
Reviewer	13	1	2	3	12	6	1	2	3	14	15
Observer	5				4					4	5

3st Selective Fight										
15 - 17 team Fights					18 - 20 team Fights					
Group	I	II	III	IV	V	I	II	III	IV	V	VI
Reporter	15	11	12	13	14	18	13	14	15	16	17
Opponent	4	5	1	16	17	5	6	1	19	20	4
Reviewer	7	8	9	2	3	9	10	11	2	3	8
Observer				10	6				12	7	

The distribution of the team leaders among the groups assures that they do not judge their own team.

Distribution of the team leaders among the groups										
15 - 17 team Fights					18 - 20 team Fights					
Group	I	II	III	IV	V	I	II	III	IV	V	VI
Leaders	2	3	4	5	1	2	3	4	5	6	1
Leaders	8	9	10	6	7	8	9	10	11	12	7
Leaders	12	13	14	15	11	14	15	16	17	18	13
Leaders			16	17		20					19

The schemes for the Selective PF with more than 20 or less than 15 teams, should be composed by using the same principles.

XIII. The Semifinal

Nine teams having the highest TR in the Selective Fights participate in the Semifinal. The team taking place 10 to 12 may participate in the Semifinal if its TR equals that of the team taking place 9 and its TSP differ no more then 6 from that of the team taking place 9. Teams in the schemes are enumerated according to their TR (if equality TSP, if equality - by lot).

Distribution of team among the grups				Distribution of team leaders among the grups			
Group	I	II	III	Group	I	II	III
Reporter	1	2	3	Leaders	2	3	1
Opponent	6	5	4	Leaders	5	4	6
Reviewer	7	8	9	Leaders	8	9	7
Observer	(12)	(11)	(10)	Leaders	(11)	(10)	(12)

The coefficient of the Opponent challenging for problem "Think up a problem yourself" in Selective and Semifinal PFs is 2.2, since he takes the risk to face the unknown problem, and it is 2 for any other problem. If the Jury consists of 5 or 6 persons, then in the evaluation of the mean grade the lowest grade is withdrawn. If the Jury consists of more than 6 persons, then the highest and the lowest grades are withdrawn

XI. The resulting parameters

1. For a team in the PF

SP - (the sum of points) is the sum of mean grades multiplied by the corresponding coefficients and rounded to l.

SP_j - is the sum of points of the team taking place j in a given PF.

R - (the rating), characterizes the success of the team in the PF.

R_j - is the rating of the team taking place j, it depends upon j, SP_j and the value of $(SP_i - SP_j)$. The rating of the team taking place j is determinated according to the following table:

	Place in PF				
	1	2,3,4	2	3,4	3,4
		$SP_1-SP_j<7$	$SP_1-SP_j>6$	$SP_2-SP_j<7$	$SP_2-SP_j>6$
$SP_j>289$	5	5	4	4	3
$290>SP_j>239$	4	4	3	3	2
$240>SP_j>189$	3	3	2	2	1
$190>SP_j$	2	2	1	1	0

This rule of evaluation of R holds for all PFs

2. For a team in the Tournament

TSP - (the total sum of points) equals the sum SP of the team in all PFs

TR - (the total rating) is the sum of ratings of the team in all PFs

3. For members of a team.

The speech of the member of a team as a Reporter, an Opponent or a Reviewer is considered successful if all the grades for it taken into account are higher than 3+. In the successful speeches the member of a team gathers points:

Grade	5+	5	5-
Points	3	2	1

IR - (the individual rating) equals the sum of points gathered by the member of the team in all successful speeches, divided by the number of the grades taken into account.

IRS - the total individual rating in Selective PFs

IRT - the total individual rating in all PFs.

XII. Selective PF

In the course of the Selective Fights any one team meets with another team only once in accordance with the following scheme (numbers of teams in the schemes are determined by lot).

The Observer
participates in common discussion
Limitation of the number of presentations:
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