

# The Regulations of the International Young Physicists' Tournament

## I. International Young Physicists' Tournament

The International Young Physicists' Tournament (IYPT) is a competition among teams of secondary 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, called Physics Fights (PF).

## II. The problems of the IYPT

The 17 problems are formulated by the International Organizing Committee (IOC) and sent to the participating countries not later than in October. These problems may be used in any competition that could lead to selection of a national team. They may be used in International tournaments that involve foreign teams not taking part in IYPT.

## III. The participants of the IYPT

### 1. *The national teams*

Any invited country, as well as the host country, is represented by one team. A country can only take part in the IYPT if it is nominated and accompanied either by the country's IOC representative or by the representative of a candidate IMO.

### 2. *The membership of the teams*

A team is composed of five secondary school students. All members of the team must either be citizens of the country they represent, or be enrolled as students in a school of the country they represent. Secondary school graduates can participate in the IYPT in the year of their graduation. The participation of university students is not allowed. The LOC may allow participation of teams of four or three students. The composition of the team cannot be changed during the Tournament. The team is headed by a Captain who is the official representative of the team during the PFs.

3. The team is accompanied by one or two team leaders.

## IV. The Jury

The Jury is nominated and organized by the LOC in cooperation with EC. The Jury consists of at least five members, if possible from different countries. Team leaders, at least one from each team, are included in the Jury. The team leaders cannot be members of the Jury in the PF where their teams participate and should not, if possible, grade the same team more than twice.

## V. The agenda of the IYPT

The IYPT is carried out in a period determined by the LOC (from May to July).

All teams participate in five Selective PFs. Selective PFs are carried out according to a fixed schedule as detailed in the attachment to these Regulations. Numbers are ascribed to teams by lot. The best teams participate in the Final PF.

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 PF the members of a team communicate only with each other.

Before the beginning of a PF, the Jury and the teams are introduced.

The PF is carried out in three (or four) Stages. In each Stage, a team plays one of the three (four) roles: Reporter, Opponent, Reviewer (Observer). In the subsequent Stages of the PF, the teams change their roles according to the schemes:

### *Three teams PF*

	Stage 1	2	3
Team			
1	Rep	Rev	Opp
2	Opp	Rep	Rev
3	Rev	Opp	Rep

### *Four teams PF*

	Stage 1	2	3	4
Team				
1	Rep	Obs	Rev	Opp
2	Opp	Rep	Obs	Rev
3	Rev	Opp	Rep	Obs
4	Obs	Rev	Opp	Rep

## VII. The Stage regulations

The performance order in the Stage of a PF:

Reserved time in minutes

The Opponent challenges the Reporter for the problem . . . . .	1
The Reporter accepts or rejects the challenge . . . . .	1
Preparation of the Reporter . . . . .	5
Presentation of the report . . . . .	12
Questions of the Opponent to the Reporter and answers of the Reporter . . . . .	2
Preparation of the Opponent . . . . .	3
The Opponent takes the floor, maximum 4 min. and discussion between the Reporter and the Opponent . . . . .	14
The Opponent summarizes the discussion . . . . .	1
Questions of the Reviewer to the Reporter and the Opponent and answers to the questions . . . . .	3
Preparation of the Reviewer . . . . .	2
The Reviewer takes the floor . . . . .	4
Concluding remarks of the Reporter . . . . .	2
Questions of the Jury . . . . .	5

In the last Selective PF and in the Final PF the procedure of challenge is omitted. The official language of the IYPT is English.

## VIII. The team performance in the Stages

**The Reporter** presents the essence of the solution to the problem, attracting the attention of the audience to the main physical ideas and conclusions.

**The Opponent** puts questions to the Reporter and criticizes the report, pointing to possible inaccuracy and errors in the understanding of the problem and in the solution. The Opponent analyses the advantages and drawbacks of both the solution and the presentation of the Reporter. The discussion of the Opponent should not become a presentation of his/her own solution. In the discussion, the solution presented by the Reporter is discussed.

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

**The Observer** does not participate actively in the PF.

During one PF only one member of a team takes the floor as Reporter, Opponent or Reviewer; other members of the team are allowed to make brief remarks or to help with the presentation technically. No member of a team may take the floor more than twice during one Selective PF or, as Reporter, more than three times in total during all Selective PFs. During the Final PF any team member can take the floor only once.

The LOC must inform about the devices available for presentations not later than two months before the IYPT.

## IX. The rules of problem-challenge and rejection

1. All problems presented in the same PF must be different.

2. *Selective PF*

The Opponent may challenge the Reporter on any problem with the exception for a problem that:

- a) was rejected by the Reporter earlier;
- b) was presented by the Reporter earlier;
- c) was opposed by the Opponent earlier;
- d) was presented by the Opponent earlier.

If there are less than five problems left to challenge, the bans d), c), b), a) are successively removed, in that order.

During the Selective PFs the Reporter may reject the challenge of three different problems in total without penalty. For every subsequent rejection the coefficient of the Reporter (see section X) is decreased by 0.2. This reduction continues to apply during the following selective PFs. The maximal number of different problems a team is allowed to reject during the whole competition is 8.

The following special rules apply to the last Selective PF:

- The procedure of challenge is omitted. All teams may choose the problem to present. The only exception is that a team may not present a problem, which they presented earlier in the Selective Fights, and all problems presented in one group must be different. In case teams of one group choose the same problem, priority is given to the team with the higher TSP (see section XI).
- A team has to select its problems and submit this selection immediately (at most 15 minutes) after the end of previous PF.

- The problem which a team presents in this PF may not be presented again in the Final PF by the same team.

### 3. *Final PF*

Within four hours after the announcement of the results of the Selective PFs the teams participating in the Final choose their problems. In case teams choose the same problem, priority of selecting problems for the Final is determined by the TSP (in case of equality by FW). The choice should be made public immediately.

For the last selective fight and the final, if a team does not select the problem according to the regulations, the problem to be presented is the first one on the list of problems that was not rejected nor presented by the team before and was not chosen by one of the other teams for that PF. If there are several teams who would get the same problem to be presented in the same room, the team with a name higher up in the alphabet gets the first one, etc.

## **X. The grading**

After each stage the Jury grades the teams, taking into account all presentations of the members of the team, questions and answers to the questions, and participation in the discussion. Each Jury member shows integer marks from 1 to 10. The mean of the highest and the lowest marks is counted as one mark which is then added to the remaining marks. This sum is used to calculate the mean mark for the team. The mean marks are multiplied by various coefficients: 3.0 or less (see section IX) for the Reporter, 2.0 for the Opponent, 1.0 for the Reviewer and then transformed into points.

## **XI. The resulting parameters**

### 1. *For a team in the PF*

The sum of points (*SP*) is the sum of mean marks, multiplied by the corresponding coefficients and rounded to one decimal.

### 2. *For a team in the Tournament*

The total sum of points (*TSP*) equals the sum of *SP* of the team in all Selective PFs. The number of fights won (*FW*) is the number of Selective PFs, in which a team received the highest *SP* from all three or four teams participating in the same PFs.

## **XII. The Final**

The three teams having the highest *TSP* in the Selective PFs participate in the Final. In case teams have equal *TSP*, their participation in the Final is decided by *FW*. If team(s) winning all their Selective PFs (*FW*=5) did not reach the Final by *TSP*, the best of them (determined by *TSP*) takes part in the final as fourth team.

The order of presentation in the Final is determined by position by entering the final: the higher the *position*, the higher the number in the scheme of section VI.

### **XIII. The final team ranking of the IYPT**

Students in the top half (rounded up) of participating teams receive medals. The students of the team winning the Final are awarded the winners' cup. If two or three teams have the same *SP* result in the Final, the winner is nominated according to the highest *TSP*, in case of equality by *FW*. All teams participating in the final are awarded 1<sup>st</sup> place certificates and gold medals. The five best teams not participating in the final are awarded 2<sup>nd</sup> place certificates and silver medals. 3<sup>rd</sup> place certificates and bronze medals are awarded to students in all other teams finishing in the top half. All other students receive certificates of participation. Team leaders obtain certificates indicating the ranking of their team.

### **XIV. The status of the regulations of the IYPT**

The regulations are established by the IOC and may be changed only by the IOC.

*Accepted in Singapore on 13<sup>th</sup> of July 2017.*