IYPT Team Canada Selection Process

2026 Edition

1. Overview

1.1. CaYPT Team Competition

In the CaYPT Team Competition, students form teams of 3-5 to solve the 10 CaYPT Problems selected by the CaYPT Problem Selection Committee. **All** students who completed the 5 selective Physics Matches (PMs) that are currently attending a Canadian secondary school (or equivalent) are eligible to submit reports for the individual selection stage.

1.2. Individual Selection

The individual selection stage permits students to submit their work in a scientific report/manuscript format. This stage determines students' eligibility to participate in IYPT 2026 as a part of Team Canada.

Each of the eligible teams can submit a maximum of 10 reports to be judged, one for each CaYPT problem.

Before submission, every report must have all the identification information removed. Students are asked to declare their contribution to every problem.

The reports are then graded by a panel of internal and external graders.

Each report will be first given a raw unnormalized score based on the CaYPT Individual Selection Report Grading Rubric, which is similar in expectation to IYPT report standards. Only reports that pass the Minimum Unnormalized Score Cutoff (MUSC) will be considered. See **Section 3.** for details.

The raw score is then normalized by the following process: The top report on each problem receives a score of 10 points. The remaining reports on the same problem will be graded relative to the top report.

The contribution of each student is then considered. The report score and contribution coefficient will generate a cumulative score for each student. A student's final ranking is determined by a student's cumulative score.

A sample calculation can be found in **Section 3**.

The CaYPT Organizing Committee (COC) will announce the winner of the individual selection stage. Top students from this stage become IYPT Team Candidates and may be considered by the COC to represent Canada in the IYPT.

1.3. IYPT Team Formation and Preparation

Top 5 IYPT Team Candidates are tentatively selected to form IYPT Team Canada.

IYPT Team Candidates may organize and engage in efforts to conduct additional research on the 10 CaYPT problems to meet IYPT standards under the supervision and guidance of the IYPT IMO representative and IYPT Team Leader.

A Qualification Review will be conducted by the COC before the deadline of IYPT registration to confirm the eligibility of IYPT Team Candidates and to finalize IYPT Team Canada composition.

2. Report Submission and Evaluation

2.1. Report Format

Participants of the individual selection stage are expected to submit reports of their work on a CaYPT Problem in the style of a professional scientific publication. The COC will provide a standard LaTeX template adapted from Physical Review format to standardize all submitted reports. The submitted reports must adhere to the following formatting requirements:

1. Contains the following sections: abstract, introduction, body text, conclusion, (optional) appendix, references.

2. Abstract must be less than 600 characters.

3. Main text (title + abstract + introduction + body text + conclusion + figures) must be less than 3750 words and less than 6 pages.

4. Written using the provided standard LaTeX template.

5. Figures are legible without zooming in. Descriptive captions are included.

6. Figures placed as close as possible to the text first referencing them.

7. References provided using bibtex. Style doesn't matter. Does not contribute to word limit. In-text citation is required, use cross-referencing whenever required.

8. Appendix section formatted in single column format. The length of the appendix is unlimited but is not graded. Graders may choose to find supplementary information if they desire.

9. For any additional formatting details, use Physical Review style as a reference.

10. Only submit rendered PDF. .tex file submission not accepted.

Submitted reports will undergo a round of editorial review to check that the formatting requirements above are met. Reports that do not meet the requirements above or contain problems that are deemed to impede the further processing/grading of the report will be rejected without grading.

2.2. Identification Information

Before submission, every report (presentation) must have all identification information removed. This includes, but is not limited to: school name, school logo, sponsor logo, and student name. The reports will be graded anonymously.

2.3. Report Processing Fee

The COC charges a report process fee of $70.00 CAD per submitted report. This fee is used to provide financial compensation to our graders.

2.4. Report Submission Form

The reports will be submitted through a Google Form. In the form, every student will declare their contribution to a particular problem. One form submission is required for every report. Each team can submit one report per CaYPT Problem.

A report may include contribution from students of different teams. This is to account for the extensive collaboration between teams from the same school. Each student will receive credit from one report of a particular problem. For calculation details see **Section 3**.

2.5. Contributors

All contributors must be included in the form. This also include students who are not participating in the individual selection stage. The contribution of each collaborator must be clearly stated.

Contribution declaration will be confirmed with all contributors after the report submission stage.

Contribution Category (18 in total):

- A. Reference Searching
- B. Reproduction of the Phenomenon
- C. Design of Preliminary Experiment (e.g. constant measurement)
- D. Theoretical Derivation for Preliminary Experiment
- E. Construction of Preliminary Experiment
- F. Preliminary Experiment Data Collection
- G. Preliminary Experiment Data Analysis
- H. Analytical Derivation of Theoretical Model
- I. Computational/Numerical Solution of Theoretical Model
- J. Design of Main Experiment
- K. Construction of Main Experiment
- L. Calibration/Testing of Instrumentation
- M. Main Experiment Data Collection
- N. Development of Data Analysis Techniques (i.e. data processing algorithm and protocol)
- O. Main Experiment Data Analysis
- P. Presentation Slide Making

Q. Graphs in Presentation

R. Media and Animation in Presentation (e.g. photo/video editing, 3D rendering etc.)

All 18 Contribution Categories are weighted equally.

For each of the Contribution Categories, if there is one contributor, write his/her name.

If instead there are multiple contributors, please follow the following format:

Name 1 (70/100), Name 2 (20/100), Name 3 (10/100). Where (–/100) indicates the **Relative Contribution** of each contributor.

Students should reach a consensus with their collaborators regarding the Relative Contributions. Each student should keep a record of their Relative Contribution to each problem and should verify after the ranking breakdown is made public.

In case of a dispute, an investigation will be initiated by the CaYPT Committee. If a student is found to have intentionally misreported another student's Relative Contributions, disciplinary actions will be taken. Such an offence will result in one's disqualification from the current individual selection process and may result in one's permanent disqualification from future CaYPT competitions.

2.6. Report Grading and Feedback

The submitted reports are graded by three graders: an External Grader (EG), a Junior Internal Grader (JIG) and a Senior Internal Grader (SIG).

Grader qualification requirements are as follows:

1. The External Grader (EG) must be a juror who has judged in the current year of CaYPT for at least two half days.

2. The Junior Internal Grader (JIG) must be a member of the COC who has previously qualified for IYPT/OYPT/O-IYPT and is currently pursuing studies in physics, engineering or related disciplines.

3. The Senior Internal Grader (SIG) must be a member of the COC who has previously judged in IYPT/OYPT/O-IYPT.

Graders are obligated to grade reports based on the CaYPT individual selection Report Rubric. Each grader will give a score based on the rubric which is recorded as the Unnormalized Report Scores (urs).

The relative weights of the graders are distributed as follows: External Grader (35%), Junior Internal Grader (20%), Senior Internal Grader (45%).

Section 3. shows detailed formulae for the score calculation.

2.7. Academic Integrity

Academic integrity is an important matter and should be taken seriously. Possible academic integrity offences include plagiarism and falsification.

Plagiarism may include but is not limited to:

A. Inadequate citations

B. Submitting reports made in whole or in part by someone else as your own

C. Use of AI-based tools to generate the whole (or part of the) report

D. Buying or selling any part of the report

Falsification may include but is not limited to:

A. Fabricating data

B. Altering data to match expectations

Sanctions for committing an academic integrity offence may include one or multiple of the following:

A. Disqualification from the current individual selection process

B. Limited disqualification from future CaYPT competitions

C. Permanent disqualification from future CaYPT competitions

D. Letter to team leader about the incident

E. Letter to school about the incident

All sanctions related to academic integrity will be determined by a disciplinary committee consisting of four CaYPT Committee members and one independent advisor with a degree in physics.

3. Ranking Calculation

3.1. Definition of Parameters

Unnormalized Report Scores (urs): The raw scores given to a report submission based on CaYPT Individual Selection Report Rubric. [0,10]

Number of Submitted Reports (N_i): The number of report submissions received for the particular problem i.

Minimum Unnormalized Score Cutoff (MUSC): The minimum Report Score (rs) a problem need to received to be considered for subsequent calculations. [0,10]

Report Score (rs): Best report on a problem gets 10. Other reports graded relative to the best report. This is referred to as normalization. One Report Score given per report submitted. [0,10]

Relative Contribution (rc): Contribution of a student in a Contribution Category for one CaYPT problem. [0,100]

Contribution Coefficient (c): Sum of a student's Relative Contributions (rc) for one CaYPT Problem normalized. [0,1]

Student Score (s): Product of Contribution Coefficient and Report Score for each CaYPT Problem summed overall problems. [0,100]

3.2. Formulae

Report Scores (rs):

For each grader (EG, JIG, SIG) will give every report an Unnormalized Report Score (urs). These are denoted as urs_{EG}, urs_{JIG}, urs_{SIG} respectively. The urs for each grader is normalized with respect to the highest-scoring report identified by each grader to generate the report's rs_{EG}, rs_{JIG}, urs_{SIG} respectively.

Finally, the Report Score (rs) is calculated by a weighted average of the rs_{EG}, rs_{JIG}, urs_{SIG}.

$$rs = 0.35(rs_{\text{EG}}) + 0.20(rs_{\text{JIG}}) + 0.45(rs_{\text{SIG}}) \tag{1}$$

Minimum Unnormalized Score Cutoff (MUSC):

For CaYPT Problems the MUSC is a constant of 2. This means that if a report receives a urs less than 2 from any of the graders, it will not be considered for subsequent calculations.

Contribution Coefficient(c):

$$c = \frac{1}{1800} \sum_{n=1}^{18} rc_n \tag{2}$$

where rc_n represents the Relative Contribution (rc) of a student in the $n = 18$ Contribution Categories.

Student Score (s):

$$s = \sum_i \max\{(rs_i)(c_i)\} \tag{3}$$

If a student contributed to multiple submissions of the same report the maximum of the product of the rs and c for the report is used in the calculation. This means that a student can only receive credit once for one problem. The summation over the index i indicates summation over all the problems that the student contributed to.

In case of a tie, the student who contributed to more rarer problems is ranked on top. The Rareness of a problem is determined by the number of report submissions received (N_i). To compute the Rareness of a student's set of problems, the Rareness of a student's contributed problems is averaged.

3.3. Calculated Example

JC is a student of CaYPT 202X. He did CaYPT 202X Problem A and J. He is in a school with two teams, Team Alpha and Team Beta. He is part of Team Alpha and he helped Team Beta with their version of the Problem A report.

The relative contributions are as follows:

Problem A (Team Alpha):

$$c_{A_\alpha} = \frac{1}{1800} \sum_{n=1}^{18} rc_n = \frac{1200}{1800} \tag{4}$$

Problem A (Team Beta):

$$c_{A_\beta} = \frac{1}{1800} \sum_{n=1}^{18} rc_n = \frac{900}{1800} \tag{5}$$

Problem J (Team Alpha):

$$c_J = \frac{1}{1800} \sum_{n=1}^{18} rc_n = \frac{1500}{1800} \tag{6}$$

After all the reports are graded here are the grades JC received for his submissions exactly as stated on the rubric:

Parameters	Problem A_α	Problem A_β	Problem J_α
EG's urs for JC's submission	5.5	4	1.5
EG's top urs	8	8	7.5
JIG's urs for JC's submission	6	4	2.5
JIG's top urs	9	9	7.5
SIG's urs for JC's submission	5	4	2
SIG's top urs	7.5	7.5	8.5

First, let's perform the normalization process:

rs for grader(normalized)	Problem A_α	Problem A_β	Problem J_α
EG	6.875	5.000	2.000
JIG	6.667	4.444	3.333
SIG	6.667	5.333	2.353

For example EG's rs for Problem A_α is determined by:

$$\frac{(\text{EG's urs for JC's submission for Problem } A_\alpha)}{(\text{EG's top urs for Problem } A_\alpha)} \times 10 = \frac{5.5}{8} \times 10 = 6.875 \tag{7}$$

Note that since the EG gave JC's submission of Problem J_α a urs of 1.5, and this urs is lower than the MUSC of 2. JC's submission for Problem J_α will not contribute to his Student Score (s). For later steps, the rightmost column of the previous table is dropped.

Now we can perform a weighted average of the rs from each grader to determine JC's rs for each problem with the weighting defined in equation 1.

For Problem A_α:

$rs_{A_\alpha} = 0.35(6.875) + 0.2(6.667) + 0.45(6.667) = 6.740$

For Problem A_β:

$rs_{A_\beta} = 0.35(5.000) + 0.2(4.444) + 0.45(5.333) = 5.039$

Finally, we compute JC's Student Score (s). There are two versions of Problem A. We compute the product of the rs and c and take the max.

The Team Alpha version is $\frac{1200}{1800}(6.740) = 4.493$

The Team Beta version is $\frac{900}{1800}(5.039) = 2.520$

So we take the Team Alpha version for later calculations.

Thus JC's Student Score (s) is just

$s = 4.493$

All calculations are exact. Rounding is made for display purposes only.

4. IYPT Team Candidate Eligibility

Student Scores (s) are calculated and ranked (an example of which is given in Section 3). The individual selection stage final ranking is determined by a combination of Student Score ranking, the eligibility criteria and diversity criteria detailed in this section.

IYPT Team Candidate is defined as students ranked top of the individual selection stage final ranking. IYPT Team Candidates are admitted to CaYPT National Camp for further training and selection. IYPT Team Members is the subset of 5 students within IYPT Team Candidates who are selected by the CaYPT National Camp to represent Canada in the IYPT. See Section 5 for details about CaYPT National Camp.

4.1. Eligibility Criteria

A. Each IYPT Team Candidate must be a current student of a Canadian secondary school (or equivalent).

B. Each IYPT Team Member must either be a Canadian citizen or hold Permanent Resident (PR) status.

C. Each IYPT Team Candidate must have participated in both days of the most recent CaYPT.

D. Each IYPT Team Candidate must have been on stage once in the most recent CaYPT (either as Reporter, Opponent, or Reviewer).

E. Students who have participated in previous CaYPT National Camp or IYPT/OYPT/O-IYPT and are currently in their final year of secondary school study are strongly encouraged to apply to be a Team Leader.

4.2. Diversity Criteria

A. No more than 40% of IYPT Team Candidates may have participated in previous IYPT/OYPT/O-IYPT.

B. No more than 40% of IYPT Team Candidates may have participated in the most recent CaYPT as a part of the same team.

Only students who meet all of the eligibility criteria will be considered for IYPT Team Candidate status. Diversity criteria listed above are considered in the individual selection final ranking.

5. CaYPT National Camp, National Team and Observers

5.1. CaYPT National Camp

The CaYPT National Camp is organized to train and select students to represent Canada in the IYPT. The National Camp runs from April to July. Participants are asked to pay a participation fee to help cover the cost of materials and equipment required for training and preparation.

The CaYPT National Camp is designed to bring the students' project from nationally competitive quality to internationally competitive quality and to teach the student the process of scientific inquiry through mentorship by an experienced camp supervisor.

In the National Camp students are evaluated based on a combination of the following metrics:

1) Theory Exam (20% of camp grade)

2) Attendance/Lab Work Hours (10% of camp grade)

3) SOP Writing (10% of camp grade)

4) Numerical Methods, Figure Plotting Exercise (15% of camp grade)

5) Lab Notebook/Git Commit log (10% of camp grade)

6) Final Interview (35% of camp grade)

IYPT Team Candidates are ranked by total grade. Top 5 students are selected as IYPT Team Members.

5.2. IYPT Observer

IYPT Team Candidates may be invited to join the team as Observers. Observers do not actively compete, but they are free to watch any Physics Fights of the IYPT. This is an excellent learning opportunity for younger students. Students who participate in the IYPT as Observers are responsible for paying the Visitor participation fee to IYPT.

6. IYPT Participation

Team Members, Observers, Team Leader and Team Leader Juror form the Canadian delegation for IYPT. Each participant is responsible for their own cost of travel and the cost of participation.

The decision for Canada to participate in a year's IYPT will be made in May of that year.

If opportunities permit, IYPT Team Candidates who are not participating in the IYPT may be eligible to participate in an online version of an IYPT-styled tournament.

COC reserves all rights to make final decisions regarding IYPT Team composition and IYPT participation.

7. Status of the IYPT Team Canada Selection Process

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

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