



COUNCIL FOR THE INDIAN SCHOOL CERTIFICATE EXAMINATIONS

PRAGATI HOUSE, 3RD FLOOR, 47-48, NEHRU PLACE, NEW DELHI - 110019

TELEPHONES: 29564831, 29564833, 26411706, 26413820 E-mail : council@cisce.org FAX : 91-11-29564735

Chief Executive & Secretary

GERRY ARATHOON

M.A., B.Ed.

CISCE'S SCHEME FOR THE ICSE (CLASS X) AND ISC (CLASS XII) YEAR 2021 EXAMINATIONS

[As per directions given by the Hon'ble Supreme Court of India, in the matter of Writ Petition (Civil) No. 522 of 2021 titled Mamta Sharma v. CBSE & Ors., vide order dated 17th June 2021]

I PRELUDE

In view of the hardships and risks ensuing due to the Covid-19 pandemic wave in India recently, considering the best interests and safety of the candidates, the CISCE through its circulars dated 19th April 2021 & 1st June 2021 cancelled both, the ICSE & ISC Year 2021 Examinations, respectively. The foregoing decision of the CISCE was also placed on record before the Hon'ble Supreme Court of India in the case of *Mamta Sharma v. CBSE & Ors.* [Writ Petition (Civil) No. 522 of 2021].

II THE CERTIFICATION CHALLENGE

The cancellation of the Examinations by the CISCE keeping in mind the safety, health and well-being of the candidates was the first step in the right direction. The challenge posed before the CISCE was to provide certification & results to the candidates registered and confirmed to take the ICSE / ISC Year 2021 Examinations, without having written the examination. However, the CISCE was committed on devising a fair and unbiased criterion for the preparation of results.

III THE PARAMETERS / DATA FROM SCHOOLS

After much deliberation, the CISCE decided upon the following broad parameters which would be used for the computation of the marks. The CISCE had requisitioned the submission of necessary data by the schools concerned vide its circulars dated 29th April 2021 and 27th May 2021, for the ICSE Examination and the ISC Examination, respectively:

ICSE (Class X)

- The Average Marks of papers/subjects scored by candidates in various tests/examinations conducted by the school at the Classes IX and X through the Academic Years 2019-20 & 2020-21 respectively (in percentage form i.e. out of 100).
- Internal Assessment marks (the Project work and Practical for the ICSE Year 2021 Examination).

GERRY ARATHOON
Chief Executive & Secretary
COUNCIL FOR THE INDIAN SCHOOL
CERTIFICATE EXAMINATIONS
47-48, Pragati House, 3rd Floor
Nehru Place, New Delhi - 110019

ISC (Class XII)

- The Average Marks of papers/subjects scored by candidates in various tests/examinations conducted by the school at the Classes XI and XII through the Academic Years 2019-20 & 2020-21 respectively (in percentage form i.e. out of 100).
- The Class X Average Marks (English + best four subjects) of only those candidates who had passed Class X from Examination boards other than the CISCE, since the Class X Average Marks for candidates who had passed Class X from CISCE are already available with the board.
- The marks for the Project Work and ISC Year 2021 Practical Examination.

The data submitted by the Schools was analysed by a team of reputed Statisticians from some of the Premier Institutions in the country, along with the Senior Officials of the CISCE. An extensive scenario analysis was done based on the data gathered for different subjects. Most importantly, while devising the methodology for computing marks, the endeavour was also to ensure fairness to all the candidates confirmed to appear for the ICSE / ISC Year 2021 Examinations to the best possible extent.

After the detailed analysis of the data, the methodology was decided upon, for the computing of marks for each candidate, for each subject / paper.

IV METHODOLOGY FOR COMPUTATION OF RESULTS


(i) ISC (CLASS XII)

FACTORS USED IN THE COMPUTATIONS

1. **Best Year for the School:** From among the overall result of a school in the ISC Years 2015 to 2020 Examinations, restricted only to those years when at least 10 candidates appeared for the ISC Examination in English and at least three other subjects from the school, the best year for this school will be the year when the school achieved the best average percentage (%) in terms of the total scores (out of 400 i.e., English + best 3 subjects.)
2. **Benchmark Standard Deviation (common for all subjects) for a School (σ):** It is the Standard Deviation of the percentage (%) marks based on English + best 3 subjects (out of 400) obtained by all candidates of that school who appeared in the Best Year (as per #1).

EXCEPTION: The value of σ for a school that never had at least 10 candidates appearing for English and at least three other subjects in a single year, will be the **National Standard Deviation** of the total scores of the previous ISC Examination (Year 2020) conducted by the CISCE.

3. **Subject benchmark average percentage for a school (μ):** It is the school average percentage (%), in the theory paper of a subject, in the **Best Year for the School** (as per #1), provided at least 10 candidates appeared for the subject from the school that year.


GERRY ARATHOON
Chief Executive & Secretary
COUNCIL FOR THE INDIAN SCHOOL
CERTIFICATE EXAMINATIONS
47-48, Pragati House, 3rd Floor
Nehru Place, New Delhi - 110019

EXCEPTION:

- If a school did not have at least 10 candidates appearing for the ISC Examination for a particular subject, in the **Best Year for the School** (as per #1), the National Average Percentage (%) of the subject from the previous ISC Examination (Year 2020) conducted by the CISCE [calculated using the theory percentage (%) of the subject of all candidates appearing for that subject in the Year 2020 Examination], will be used as the subject benchmark average μ for that subject for that school.
- For subjects newly introduced for the ISC Year 2021 Examination, the value of μ will be taken to be equal to m as to be computed in #10.

4. **Subject Raw Theory Percentage (P_{raw}):** The maximum of the average percentage (%) marks obtained by a candidate in the theory paper of the said subject, in either Class XI or Class XII.
5. **Subject Project and/or Practical Work Marks (PS):** Total marks obtained by the candidate in the Project and/or Practical Work of the subject.
6. **Percentage Subject Project and/or Practical Work (B):** Percentage (%) of marks obtained by the candidate in the Project and/or Practical Work of the subject. Note that it is the marks obtained for Project and/or Practical Work, expressed as a percentage (%).
7. **Subject Raw Marks:** $P_{raw} \times \text{weightage for board (theory) marks} + PS$ (from #4 and #5) for subjects with Project and/or Practical Work components.

Note: Weightage for board (theory) marks is = $\frac{\text{maximum (theory) marks of a subject}}{100}$

EXCEPTION: For subjects with no Project and/or Practical Work components, the subject raw marks is taken as equal to P_{raw} .

8. **Raw total:** Using the Subject Raw Marks (from #7), the Total Marks (out of 400) for a candidate for English and best three subjects will be calculated.
9. **Raw Standard Deviation (common for all subjects) for a school (s):** It is the Standard Deviation of the percentage based on the raw totals (out of 400) obtained by all candidates of the school appearing for English and at least three other subjects in ISC Year 2021 Examination (see #8).

EXCEPTION: If a school has less than 10 candidates appearing for English and at least three other subjects in ISC Year 2021 Examination, the **National Standard Deviation** of the Raw Totals from ISC Year 2021 Examination (for candidates appearing for English and at least three other subjects) will be the value of s for that school.

10. **Subject Raw Average Percentage for a School (m):** It is the School Average Percentage in the **theory paper** for the subject in ISC Year 2021 Examination, provided at least 10 candidates appeared for the subject from that school in ISC Year 2021 Examination.



GERRY ARATHOON
Chief Executive & Secretary
COUNCIL FOR THE INDIAN SCHOOL
CERTIFICATE EXAMINATIONS
47-48, Pragati House, 3rd Floor
Nehru Place, New Delhi - 110019

EXCEPTION: If a school does not have at least 10 candidates appearing for a subject in ISC Year 2021 Examination, the **National Raw Theory Percentage** average for ISC Year 2021 Examination (calculated using raw theory percentages of the subject of all candidates appearing for that subject in ISC Year 2021 Examination) will be used as the Subject Raw Average Percentage m for that subject, for that school.

11. **Class X Board Percentage (C):** It is the percentage (%) marks obtained by the candidate in Class X board examination [English + Best four subjects].

ALGORITHM TO BE USED:

- (a) Compute the scaled score (A) as: $A = \frac{\sigma}{s}(P_{\text{raw}} - m) + \mu$.

[σ (Point #2), s (Point # 9), P_{raw} (Point # 4), m (Point # 10), μ (Point # 3)]

Note: For the above calculation, if $\frac{\sigma}{s} > 4$, replace it by 4.

If the obtained value of $A > 100$, take $A = 100$.

If the obtained value of $A < 10$, take $A = 10$.

- (b) Obtain the Subject Board (*theory*) Marks Percentage (percentage of marks obtained by the algorithm which will be awarded to the candidate for the board examination in a subject, in the theory papers) by:

$$\text{SUBJECT BOARD (THEORY) MARKS PERCENTAGE} = 0.6 A + 0.3 B + 0.1 C$$

Where the weightage of A is 60%, B is 30% and C is 10%

Where:

(i) Scaled Score (A): $= \frac{\sigma}{s}(P_{\text{raw}} - m) + \mu$

(ii) Percentage Subject Project and/or Practical Work (B)

(iii) Class X Board Percentage (C)

Note:

- For subjects without a project and / or practical component, the formula will be taken as $0.9A + 0.1C$ (Where the weightage of A is 90% and C is 10%).
- The same formula will be used for candidates who were unable to appear in the practical examinations.

- (c) Determine the Subject Board (*theory*) Marks as:

$$\text{SUBJECT BOARD (THEORY) MARKS} = \text{SUBJECT BOARD (THEORY) MARKS PERCENTAGE} \times \text{WEIGHTAGE FOR BOARD (THEORY) MARKS}$$

- (d) Obtain the Subject Final Marks as:

$$\text{SUBJECT FINAL MARKS} = \text{SUBJECT BOARD (THEORY) MARKS} + \text{SUBJECT PROJECT and/or PRACTICAL WORK MARKS}$$

For subjects without project and/or practical work component, take the Subject Final Marks to be the same as the Subject Board Marks.

RATIONALE:

1. The components used to arrive at the formula to award the marks in the subjects which have Project and/or Practical Work component are limited to:
 - Marks percentage in Class X Board Examination
 - Marks obtained for Project and/or Practical Work in the subjects for the ISC Year 2021 Examination.
 - The performance of the candidates in the school examinations in each of the subjects/papers in either Class XI or Class XII, measured through their maximum percentage marks obtained in the theory paper of the two years (referred to henceforth as *raw marks*).
 - The best performance of the school in the Board Examination in the last six years (ISC Years 2015 to 2020 Examinations).

The first factor measures the general proficiency of the candidates, the next two factors measure the subject proficiency of the candidates, while the last is a measure of the general quality of the schools the candidates are appearing from.
2. The theory marks awarded to the candidates are taken as a weighted average of their project and practical work component, the base and scale adjusted raw marks and Class X Board Percentage. To arrive at the weights, detailed analyses were performed on the data from the past ISC Board Examinations of the Years 2015 to 2020. Extensive scenario analyses were done based on different subjects. Most importantly, the weights were so chosen as to ensure fairness to all the candidates appearing in the Board Examination this year to the best possible extent.
3. For schools/ subjects with very few candidates, reliable benchmarking based on past/present data of the school is not possible. For such situations, the benchmarking will be done using the appropriate national benchmarks.

ILLUSTRATION:

For a subject with 30% marks allocated for Practical and Project Work and 70% for Theory marks, the subject BIOLOGY is taken as an example.

Assume that the school from which the candidate in this example is appearing, had at least 10 or more ISC candidates appearing for English and at least three other subjects every year, during ISC Years 2015 to 2020 Examinations, and the same is the case in ISC Year 2021 Examination. Also, assume that there are 10 or more candidates appearing for BIOLOGY in ISC Year 2021 Examination from the School.

Suppose the school achieved the highest school average in ISC Year 2015 Examination. Then for that school, the best year is 2015, which will be used in all our subsequent calculations.

Suppose in the Year 2015, the Standard Deviation of the percentage based on the total scores (out of 400) obtained by all candidates of the school appearing for English and at least three other subjects was 7. Hence, for the school, benchmark standard deviation (σ) will be 7 (Refer to IV ISC subpart 2).

Now, suppose we observe that the average percentage marks that the students obtained in BIOLOGY theory paper from the school in Year 2015 was 93. Then Benchmark Average Percentage (μ) for BIOLOGY will be $\mu = 93$ (Refer to IV ISC subpart 3).

Assume that the candidate concerned has obtained 80% Average Marks in Class XI, and 78% Average Marks in Class XII in BIOLOGY theory paper. Then the candidate's raw percentage of BIOLOGY theory paper will be considered as 80 (Refer to IV ISC subpart 4)

Suppose the candidate has obtained 27 (out of 30) in the BIOLOGY practical paper. Hence the percentage marks in BIOLOGY practical paper is 90 (B) (Refer to IV ISC subpart 6).

The raw marks in BIOLOGY will be $80 \times 70/100 + 27 = 83$.

We compute the Raw Total of this candidate considering his/her raw marks in English and the best three of the other subjects. Next, we do the same for all the other candidates from the school.

Suppose the Standard Deviation of these raw marks is 6 (s) (Refer to IV ISC subpart 9).

Further, suppose the average raw BIOLOGY theory percentage be 89 for all candidates from the school (m) (Refer to IV ISC subpart 10).

Hence the scaled score of the candidate in BIOLOGY will be calculated as per:

$$(A) = \frac{\sigma}{s}(P_{\text{raw}} - m) + \mu$$

$$\text{i.e. } A = \frac{7}{6}(80 - 89) + 93 = 82.5.$$

To compute the Subject Board (theory) Marks Percentage, the candidate's class X percentage will also be required. Suppose the Class X percentage of the candidate is 95 (C).

Hence,

SUBJECT BOARD (THEORY) MARKS PERCENTAGE = 0.6 A + 0.3 B + 0.1 C

Subject (BIOLOGY) Board (Theory) Marks percentage = $0.6 \times 82.5 + 0.3 \times 90 + 0.1 \times 95 = 86$.

SUBJECT BOARD (THEORY) MARKS = SUBJECT BOARD (THEORY) MARKS PERCENTAGE \times WEIGHTAGE FOR BOARD (THEORY) MARKS

Subject (BIOLOGY) Board (theory) marks = $86 \times 0.7 = 60.2 \approx 60$.

SUBJECT FINAL MARKS = SUBJECT BOARD (THEORY) MARKS + SUBJECT PROJECT and/or PRACTICAL WORK MARKS

Subject (BIOLOGY) Final Total Marks = $60 + 27 = 87$.

(ii) ICSE (CLASS X)

FACTORS USED IN THE COMPUTATIONS

1. **Best year for School:** From among the overall result of a school in the ICSE Years 2015 to 2020 Examinations, restricted only to those years when at least 10 candidates appeared for the ICSE Examination in English and at least four other subjects from the school, the best year for this school will be the year

when the school achieved the best average percentage (%) in terms of the total scores (out of 500 i.e., English + best 4 subjects).

2. **Benchmark Standard Deviation (common for all subjects) for a school (σ):** It is the Standard Deviation of the percentage (%) marks based on English + best four subjects (out of 500) obtained by all candidates of that school who appeared in the Best Year (as per #1).

EXCEPTION: The value of σ for a school that never had at least 10 candidates appearing for English and at least four other subjects in a single year, will be the **National Standard Deviation** of the total scores for the previous ICSE Examination (Year 2020) conducted by the CISCE.

3. **Subject benchmark average percentage for a school (μ):** It is the school average percentage (%), in the theory paper of a subject in the Best Year for the School (as per #1), provided at least 10 candidates appeared for the subject from the school that year.

EXCEPTION: If a school did not have at least 10 candidates appearing for the ICSE Examination for a particular subject, in the **Best Year for the School** (as per #1), the National Average Percentage (%) of the subject from the previous ICSE Examination (Year 2020) conducted by the CISCE [calculated using the theory percentage (%) of the subject of all candidates appearing for that subject in the Year 2020 Examination], will be used as the subject benchmark average μ for that subject for that school.

For subjects newly introduced for the ICSE Year 2021 Examination, the value of μ will be taken to be equal to m as to be computed in #10.

4. **Subject raw theory percentage (P_{raw}):** The maximum of the average percentage (%) marks obtained by a candidate in the theory paper of the said subject, in either Class IX or Class X.
5. **Subject Project and/or Practical Work Marks (PS):** Total marks obtained by the candidate in the Project and/or Practical Work of the subject.
6. **Percentage Subject Project and/or Practical work (B):** Percentage (%) of marks obtained by the candidate in the Project and/or Practical Work of the subject. Note that it is the marks obtained for a Project and/or Practical Work, expressed as a percentage (%).
7. **Subject Raw Marks:** $P_{raw} \times \text{weightage for board (theory) marks} + PS$ (from #4 and #5) for subjects with Project and/or Practical Work components.

Note: Weightage for board (theory) marks is = $\frac{\text{maximum (theory) marks of a subject}}{100}$

EXCEPTION: For subjects with no Project and/or Practical Work components, the subject raw marks is taken as equal to P_{raw} .

8. **Raw total:** Using the Subject Raw Marks (from #7) the Total Marks (out of 500) for a candidate for English and best four subjects will be calculated.



GERRY ARATHOON
Chief Executive & Secretary
COUNCIL FOR THE INDIAN SCHOOL
CERTIFICATE EXAMINATIONS
47-48, Pragati House, 3rd Floor
Nehru Place, New Delhi - 110019

9. **Raw Standard Deviation (common for all subjects) for a school (s):** It is the Standard Deviation of the percentage based on the raw totals (out of 500) obtained by all candidates of the school appearing for English and at least four other subjects in ICSE Year 2021 Examination (see #8).

EXCEPTION: If a school has less than 10 candidates appearing for English and at least four other subjects in ICSE Year 2021 Examination, the **National Standard Deviation** of the Raw Totals from ICSE Year 2021 Examination (for candidates appearing for English and at least four other subjects) will be the value of s for that school.

10. **Subject Raw Average Percentage for a School (m):** It is the school average percentage in the **theory paper** for the subject in ICSE Year 2021 Examination, provided at least 10 candidates appeared for the subject from that school in the ICSE Year 2021 Examination.

EXCEPTION: If a school does not have at least 10 candidates appearing for a subject in ICSE Year 2021 Examination, the **National Raw Theory Percentage** average for the ICSE Year 2021 Examination (calculated using raw theory percentages of the subject of all candidates appearing for that subject in ICSE Year 2021 Examination) will be used as the Subject Raw Average Percentage m for that subject, for that school.

ALGORITHM TO BE USED:

- (a) Compute the scaled score (A) as: $A = \frac{\sigma}{s}(P_{\text{raw}} - m) + \mu$.

[σ (Point #2), s (Point #9), P_{raw} (Point #4), m (Point #10), μ (Point #3)]

Note: For the above calculation, if $\frac{\sigma}{s} > 4$, replace it by 4.

If the obtained value of $A > 100$, take $A = 100$.

If the obtained value of $A < 10$, take $A = 10$.

- (b) Obtain the Subject Board (*theory*) Marks Percentage (percentage of marks obtained by the algorithm which will be awarded to the candidate for the board examination in a subject, in the theory paper) by:

SUBJECT BOARD (THEORY) MARKS PERCENTAGE = 0.7 A + 0.3 B

Where the weightage of A is 70% and B is 30%

Where:

- Scaled Score (A): $\frac{\sigma}{s}(P_{\text{raw}} - m) + \mu$
- Percentage Subject Project and/or Practical Work (B)

Note: For subjects without a project and / or practical component, the subject board (*theory*) marks percentage will be taken to be equal to A. The same formula will be used for candidates who were unable to appear in the practical examinations.

- (c) Determine the Subject Board (*theory*) Marks as:

SUBJECT BOARD (THEORY) MARKS = SUBJECT BOARD (THEORY) MARKS PERCENTAGE × WEIGHTAGE FOR BOARD (THEORY) MARKS

(d) Obtain the Subject Final Marks as:

SUBJECT FINAL MARKS = SUBJECT BOARD (THEORY) MARKS + SUBJECT PROJECT and/or PRACTICAL WORK MARKS

For subjects without project/practical work component, take the Subject Final Marks to be the same as the Subject Board Marks.

RATIONALE:

1. The components used to arrive at the formula to award the marks in the subjects which have Project and/or Practical Work component are limited to:
 - Marks obtained for the Project and/or Practical Work in the subjects for the ICSE Year 2021 Examination.
 - The performance of the candidates in the school examinations in each of the subjects in either Class IX or Class X, measured through their maximum percentage marks obtained in the theory paper of the two years (referred to henceforth as *raw marks*)
 - The best performance of the school in the Board Examinations in the last six years (ICSE Years 2015 to 2020 Examinations).

The first two factors measure the subject proficiency of the candidates, while the last is a measure of the general quality of the schools the candidates are appearing from.
2. The theory marks awarded to the candidates are taken as a weighted average of their project and practical work component, and the base and scale adjusted raw marks. To arrive at the weights, detailed analyses were performed on the data from the past ICSE Board Examinations from the Years 2015 to 2020. Extensive scenario analyses were done based on different subjects. Most importantly, the weights were so chosen as to ensure fairness to all the candidates appearing in the Board Examination this year, to the best possible extent.
3. For schools / subjects with very few candidates, reliable benchmarking based on past/present data of the school is not possible. For such situations, the benchmarking will be done using the appropriate national benchmarks.

ILLUSTRATION:

(For a subject with 20% marks allocated for Internal Assessment marks and 80% for Theory marks, the subject MATHEMATICS is taken as an example.)

Assume that the school from which the candidate in this example is appearing, had at least 10 or more ICSE candidates appearing for English, and at least four other subjects every year, during ICSE Years 2015 to 2020 Examinations, and the same is the case in ICSE Year 2021 Examination. Also, assume that there are 10 or more candidates appearing for MATHEMATICS in ICSE Year 2021 Examination from the School.

Suppose the school achieved the highest school average in ICSE Year 2019 Examination. Then for that school, the best year is 2019, which will be used in all our subsequent calculations.

Suppose in the Year 2019, the Standard Deviation of the percentage based on the total scores (out of 500) obtained by all candidates of the school appearing for English and at least four other subjects was 9. Hence, for the school, benchmark standard deviation (σ) will be 9 (Refer to IV ICSE subpart 2).

Now, suppose we observe that the average percentage marks that the students obtained in MATHEMATICS theory from the school in Year 2019 was 70. Then Benchmark Average Percentage (μ) for MATHEMATICS will be $\mu = 70$ (Refer to IV ICSE subpart 3).

Assume that the candidate concerned has obtained 90% Average Marks in Class IX, and 80% Average Marks in Class X in MATHEMATICS theory. Then the candidate's raw percentage of MATHEMATICS theory paper will be considered as 90 (Refer to IV ICSE subpart 4).

Suppose the candidate has obtained 20 (out of 20) in the MATHEMATICS project. Hence the percentage marks in MATHEMATICS project is 100 (B) (Refer to IV ICSE subpart 6).

The raw marks in MATHEMATICS is $90 \times 80/100 + 20 = 92$.

We compute the Raw Total of this candidate considering his/her raw marks in English and the best four of the other subjects. Next, we do the same for all other candidates from the school.

Suppose the Standard Deviation of these raw marks is 12 (s) (Refer to IV ICSE subpart 9).

Further, suppose the average raw MATHEMATICS theory percentage be 78 for all candidates from the school (m) (Refer to IV ICSE subpart 10).

Hence the scaled score of the candidate in MATHEMATICS will be calculated as per: (A): $= \frac{\sigma}{s}(P_{raw} - m) + \mu$

$$\text{i.e. } A = \frac{9}{12}(90 - 78) + 70 = 79.$$

Hence,

Subject Board (Theory) Marks Percentage = 0.7A + 0.3 B

Subject (MATHEMATICS) Board (theory) Marks percentage = $0.7 \times 79 + 0.3 \times 100 = 85.3$.

Subject Board (Theory) Marks = Subject Board (theory) Marks Percentage \times Weightage for Board (Theory) Marks


Subject (MATHEMATICS) Board (Theory) Marks = $85.3 \times 0.8 = 68.24 \approx 68$.

Subject Final Marks = Subject Board (Theory) Marks + Subject Project and/or Practical Work Marks

Subject (MATHEMATICS) Final Total Marks = $68 + 20 = 88$.

V PREPARATION OF RESULTS

After obtaining the marks for each candidate, for each subject / paper, using the above methodology, the CISCE will prepare the results of the ICSE and ISC Year 2021 Examinations, incorporating the same processes, as has been the practice in the previous years.


GERRY ARATHOON
Chief Executive & Secretary
COUNCIL FOR THE INDIAN SCHOOL
CERTIFICATE EXAMINATIONS
47-48, Pragati House, 3rd Floor
Nehru Place, New Delhi - 110019

