



**St. Soldier International Convent School Mohali**  
**Holidays Homework**  
**Class – X**

Name \_\_\_\_\_

Class & Section \_\_\_\_\_



**“SUMMER IS THE PERFECT TIME TO RESET AND RECHARGE”**  
**HAPPY SUMMER VACATION TO ALL OF YOU**  
**“GOD BELSS YOU ALL”**

## MATHEMATICS

### Chapter - 1

1. Write whether  $\frac{2\sqrt{45}+3\sqrt{20}}{2\sqrt{5}}$  on simplification gives an irrational number or a rational number
2. Show that  $\frac{3+\sqrt{7}}{5}$  is irrational number, given that  $\sqrt{7}$  is irrational.
3. Find a rational number between  $\sqrt{2}$  and  $\sqrt{7}$
4. Prove that  $\sqrt{7}$  is irrational number.
5. Find HCF and LCM of 404 and 96 and verify that  $\text{HCF} \times \text{LCM} = \text{Product of the numbers}$ .
6. Two positive integers 'a' and 'b' can be written as  $a = x^3y^2$  and  $b = xy^3$ , where x and y are prime numbers. Find  $\text{HCF}(a, b)$  and  $\text{LCM}(a, b)$
7. The HCF of two numbers 'a' and 'b' is 5 and their LCM is 200. Find the product of 'a' and 'b'.
8. The HCF of two numbers is 9 times their HCF. The sum of LCM and HCF is 500. Find their HCF.
9. Can two numbers have 15 as their HCF and 175 as their LCM? Give reason.
10. Three pieces of timber 42 m, 49 m and 63 m long have to be divided into planks of the same length. What is the greatest possible length of each plank? How many planks are formed?

### Chapter - 2

11. Find the zeros of the following quadratic polynomials and verify the relationship between the zeros and the coefficients:
  - (i)  $x^2 + 3x - 10$
  - (ii)  $x^2 + 7x + 12$
  - (iii)  $2x^2 - x - 6$
  - (iv)  $4x^2 - 4x - 3$
  - (v)  $5x^2 - 4 - 8x$
  - (vi)  $2\sqrt{3}x^2 - 5x + \sqrt{3}$

12. If  $(x + a)$  is a factor of  $(2x^2 + 2ax + 5x + 10)$  then find the value of a.

### Chapter - 3

13. Solve  $2x - 3y + 4 = 0$  and  $x + 2y - 5 = 0$  graphically and find the vertices and area of the triangle formed by these lines and the x-axis
14. Solve  $4x - y - 4 = 0$  and  $3x + 2y - 14 = 0$  graphically and find the vertices and area of the triangle formed by these lines and the y-axis
15. Solve for x and y:
  - (i)  $71x + 37y = 253$  and  $37x + 71y = 287$
  - (ii)  $\frac{x}{a} + \frac{y}{b} = 2$  and  $ax - by = a^2 - b^2$
16. Find the value of k for which each of the following systems of linear equations has an infinite number of solutions:
  - (i)  $2x + 3y = 7$  and  $(k - 1)x + (k + 2)y = 3k$
  - (ii)  $2x + (k - 2)y = k$  and  $6x + (2k - 1)y = (2k + 5)$
17. Find the value of k for which each of the following systems of equations has no solution:
  - (i)  $8x + 5y = 9$  and  $kx + 10y = 15$
  - (ii)  $kx + 3y = 3$  and  $12x + ky = 6$
  - (iii)  $3x + 3y - 5 = 0$  and  $6x - 2y + k = 0$
  - (iv)  $Kx + 3y = k - 3$  and  $12x + ky = k$

### Chapter - 4

18. Solve each of the following quadratic equation:
  - (i) Show that  $x = -\frac{bc}{ad}$  is a solution of the quadratic equation  $ad^2\left(\frac{ax}{b} + \frac{2c}{d}\right)x + bc^2 = 0$
  - (ii)  $\sqrt{3}x^2 + 10x - 8\sqrt{3} = 0$

(iii)  $\sqrt{3}x^2 - 2\sqrt{2}x - 2\sqrt{3} = 0$

(iv)  $x^2 + 3\sqrt{3}x - 30 = 0$

(v)  $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$

(vi)  $\frac{x-4}{x-5} + \frac{x-6}{x-7} = 3\frac{1}{3}, x \neq 5, 7$

19. Find the value of k for which the roots of the quadratic equation  $kx(x-2) + 6 = 0$  are equal

20. Find the nonzero value of k for which the quadratic equation  $kx^2 + 1 - 2(k-1)x + x^2 = 0$  has equal roots.

Hence find the roots of the equation.

## SOCIAL SCIENCE

### **Project Work:**

Every student has to undertake any one project on the following topics:

- Consumer Awareness

**OR**

- Social Issues

**OR**

- Sustainable Development

### **Guidelines:**

1. Project should be presented in the following format:

- Cover Page
- Acknowledgement
- Content and Sub-topics
- Bibliography (This should include the sources like websites visited, newspaper, books etc.)

2. Project must be supported by pictures, diagrams, graphs, collage work, maps, and newspaper clippings.

3. Cover Page of the project must show the topic, related pictures and the particulars of the child.

4. Project should be prepared neatly on A4 Size sheets filed together and properly spiraled.

5. Project should not be more than 15 pages.

6. The Project should be handwritten and made using eco-friendly material only without incurring too much Expenditure

## SCIENCE

**1. Theme-** DIY science- makes it, test it!!

### **Choose any one**

- Make a working circuit showing series/ parallel connection
- Create a model of digestive / respiratory/ circulatory/ excretory system using recyclable material.

**2. Theme-** Chemistry in my kitchen/ garden

- Observe 2-3 common chemical changes at home
- Write the word and balanced chemical equation
- Explain the type of reaction

**3. Theme-** Create a science Riddle book

- Write riddles based on chapter done in the class
- Make flash cards to make it an interesting game.

### **Remark:-**

1. Revision of the chapter

2. Completion of science practical file

## ENGLISH

### **Based on:**

- First Flight
- Stories/Poems:
- A Letter to God
- Nelson Mandela: Long Walk to Freedom
- Dust of Snow
- Fire and Ice
- A Triumph of Surgery
- The Midnight Visitor

- A Thief's Story

## **HOLIDAY HOMEWORK – “LITERATURE THROUGH CREATIVITY”**

### **Section A**

#### **Theme Detectives (on drawing sheets)**

##### **1. Theme Hunt Chart**

- Complete the chart in a creative notebook format.
- Chapter/Poem
- Main Theme
- Supporting Incident/Line
- Moral Message

##### **Chapters for the above activity**

- A Letter to God
- Nelson Mandela
- Dust of Snow
- Fire and Ice
- A Triumph of Surgery
- The Midnight Visitor
- A Thief's Story

**Decorate with doodles/symbols related to each text.**

### **Section B**

#### **Character Studio**

##### **2. Character Instagram Profile**

- Create an imaginary Instagram page for ANY TWO characters:
- Lencho
- Mandela
- Tricki
- Ausable
- Hari Singh
- Include:
- Profile picture sketch
- Bio

##### **3 Posts with captions**

- Followers/Following
- Hashtags

##### **Example:**

“Faith stronger than the storm” #Hope #Farmer Life

### **Section C**

#### **Tone & Mood Challenge**

##### **4. Emoji Literature**

Represent the tone/mood of each chapter or poem using ONLY emojis first, and then explain in 2–3 lines.

##### **Example:** Dust of Snow

- Mood: Hopeful and refreshing.
- Do this for all seven pieces.

### **Section D**

#### **Setting Designers**

##### **5. Create the Setting**

Draw or digitally design the setting of ANY THREE:

- Lencho's farm before the hailstorm
- The Union Buildings during Mandela's oath ceremony
- Ausable's hotel room
- Anil's room in A Thief's Story
- Label important details from the text.

### **Section E**

#### **Literary Investigation**

##### **6. Quote Detective**

**Find:**

- 2 important quotes from each prose chapter
- 1 poetic line from each poem

**Then write:**

- Speaker
- Context
- Hidden meaning

**Section F****Creative Writing Corner****7. Alternate Ending**

Rewrite the ending of ANY ONE story:

- The Midnight Visitor
- A Thief's Story
- A Triumph of Surgery
- Add suspense, humour, or emotion.

**Minimum: 150 words.**

**Section G****Compare & Connect****8. Compare the Poems**

Compare Dust of Snow and Fire and Ice on the basis of:

- Theme
- Tone
- Symbols
- Message
- Nature imagery

**Present in a Venn Diagram or table.**

**Section H****Real Life Connection****9. Literature & Life**

Answer creatively:

- How is Lencho's faith relevant today?
- What qualities of Mandela make him a true leader?
- Have you ever experienced a "Dust of Snow" moment that changed your mood?
- Why is trust important in transforming people like Hari Singh?

**Section I****Fun Language Activities**

- Presentation Guidelines
- Use colourful headings.
- Add illustrations wherever possible.
- Maintain neatness and originality.
- Avoid copied internet content.
- Submit in a handmade/project file.

**Teacher's Special Thought**

"Literature is not just reading stories; it is understanding life through characters, emotions, and experiences."

**HINDI****कक्षा दसवीं ग्रीष्मकालीन गृह कार्य कलाएकीकृत परियोजना**

1. पंजाब व उड़ीसा का सह- संबंध जोड़ते हुए परियोजना कार्य कीजिए।
2. प्रथम इकाई परीक्षा की पुनरावृत्ति कीजिए।

**PUNJABI****ਜਮਾਤ ਦਸਵੀਂ ਛੁੱਟੀਆਂ ਦਾ ਕੰਮ**

1. ਪੜ੍ਹਾਈ ਵਿੱਚ ਖੇਡਾਂ ਦੀ ਥਾਂ

## 2. ਪੁਸਤਕਾਂ ਪੜ੍ਹਨ ਦੀ ਮਹੱਤਤਾ।

ਸਾਰੇ ਵਿਦਿਆਰਥੀ ਦੋਨੋਂ ਲੇਖ ਆਪਣੀ ਨੋਟਬੁੱਕ ਵਿੱਚ ਕਰਨਗੇ

- ਯੂਨਿਟ ਦੀ ਤਿਆਰੀ ਕਰਨੀ ਹੈ
- ਕਿਸੇ ਮਹਾਨ ਔਰਤ ਦੇ ਜੀਵਨ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿੰਦੇ ਹੋਏ ਪੋਜੈਕਟ ਤਿਆਰ ਕਰੋ

### **INFORMATION TECHNOLOGY**

#### **Portfolio Project Work (As per CBSE Pattern)**

**Submission:** After Summer Vacation

#### **Instructions for Students**

- Prepare the portfolio neatly in a file/folder.
- Use A4 size sheets for handwritten work.
- Cover page should include:
  - Student Name
  - Class & Section
  - Roll Number
  - Subject Name
  - Session (2026–27)
  - School Name
- The portfolio should be creative, well-organized, and properly indexed.
- Use coloured headings, pictures, charts, screenshots, and diagrams wherever required.
- Original work is expected. Avoid copy-paste content.
- Submit the portfolio on the assigned date.

#### **PORTFOLIO CONTENTS**

(Prepare in the following sequence)

##### **1. Cover Page**

- Design an attractive cover page using:
  - MS Word / Canvas / Handwritten creativity

##### **2. Acknowledgement**

Write a short acknowledgement thanking:

- Principal
- Subject Teacher
- Parents
- School
- (Approx. 80–100 words)

##### **3. Index**

- Prepare a proper index with:
  - Serial Number
  - Topic Name
  - Page Number

##### **4. Self Introduction**

- Include:
  - Name
  - Hobbies
  - Strengths
  - Career Goal
  - Favorite Technology Tool
  - (Add your photograph)

##### **5. Choose any 4 topics from Employability skills and write on this.**

### **PAINTING**

- Draw 10 sketches in A4 size sketch file. (Features from different angles, animal study, human study, bird study)
- 10 sheets on A3 size sketch file. (4 landscape, 4 still life, 1 designs, 1 folk art)

## 'AI' PORTFOLIO

### **Your portfolio should show:**

- Understanding of SDGs
- Real-life problems in society
- Possible solutions
- Your creativity and research

### **Suggested Portfolio Format:**

#### **Cover Page**

#### **Write:**

- **Title:** Sustainable Development Goals (SDG) Portfolio
- Name
- Class & Section
- Roll Number
- School Name
- Session

**You can decorate with SDG logos or drawings.**

#### **Index**

#### **Example:**

- Introduction to SDGs
- Importance of SDGs
- SDG 1 – No Poverty
- SDG 3 – Good Health and Well-being
- SDG 4 – Quality Education
- SDG 6 – Clean Water and Sanitation
- SDG 13 – Climate Action
- Conclusion
- Bibliography