G-ROOTS GLOBAL SCHOOL

SHAPING MINDS

Class 10th HOLIDAY HOMEWORK

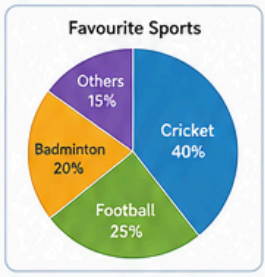
ENGLISH

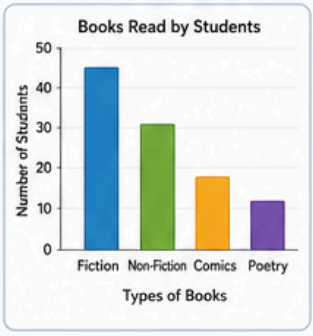
1. ANALYTICAL PARAGRAPH

An analytical paragraph requires you to "decode" visual information (like a graph, chart, or table) and describe it in a formal, objective tone.

THE STRUCTURE

- **Introduction (1–2 lines):** Paraphrase the question. Do not copy it word-for-word. Use phrases like, "The provided pie chart illustrates..." or "The graph represents the data regarding..."
- **The Body (Data Analysis):** This is where you describe the trends.
  - Highlight the highs and lows.
  - Compare and contrast different categories.
  - Use transition words like *whereas, in contrast, significantly,* and similarly.
- **Conclusion (1 line):** Summarize the overall trend or the most striking piece of information.





USEFUL VOCABULARY FOR GRAPHS

Trend	Vocabulary to Use
Growth	skyrocketed, peaked, inclined, surged
Decline	plummeted, dipped, declined, hit a low
Stability	remained constant, plateaued, leveled off
Comparison	strikingly, approximately, in comparison to

2. INFORMAL LETTER

These are written to friends, family, or close acquaintances. The tone is relaxed, personal, and conversational.

THE FORMAT

1. **Sender's Address:** (Top left) Usually 2–3 lines.
2. **Date:** e.g., 4th May 2026.
3. **Salutation:** e.g., Dear [Name] or Dearest [Name].
4. **The Body:**
   - Opening: Ask about their well-being ("I hope this letter finds you in the best of health...").
   - Main Content: The reason for writing (invitation, advice, or sharing news).
   - Closing: A warm sign-off ("Looking forward to hearing from you soon").
5. **Subscription:** e.g., Yours lovingly or With best wishes.
6. **Name:** Your first name only.

KEY DIFFERENCES AT A GLANCE

Feature	Analytical Paragraph	Informal Letter
Purpose	To analyze and interpret data/objective information.	To communicate personal feelings, news, or requests.
Tone	Formal, objective, and impersonal.	Casual, personal, and conversational.
Language	Uses third person and formal vocabulary.	Uses first person and friendly vocabulary.
Structure	Introduction, Body (Analysis), Conclusion.	Address, Date, Salutation, Body, Closing, Subscription, Name.
Focus	Facts, figures, trends, and comparisons.	Relationship, emotions, and personal connection.

FORMAT EXAMPLE (INFORMAL LETTER)

123, Green Park
New Delhi – 110016
4th May 2026

Dear Riya,

I hope this letter finds you in the best of health and spirits. I am writing to invite you to my birthday celebration this Sunday at my home.
It would mean a lot to me if you could make it.
We plan to have games, music, and a small party.
Do let me know if you can come.

Looking forward to your reply.

Yours lovingly,
Ananya

3. PROJECT FILE

1. AUTHOR OR POET STUDY (THE "LITERARY PORTFOLIO")

Select an author or poet from your First Flight or Footprints Without Feet textbook and create a detailed profile.

OPTION 1: ROBERT FROST

Focus: Analyzing the symbolism in "Dust of Snow" and "Fire and Ice."

Include:
- Biography
- Major Works
- Theme and Style
- Poem Analysis
- Your Views and Inference

OPTION 2: NELSON MANDELA

Focus: A research project on his life, the Anti-Apartheid movement, and the relevance of his "Long Walk to Freedom" speech today.

Include:
- Early Life
- Struggle and Leadership
- Achievements
- Long Walk to Freedom (Key Points)
- His Legacy and Relevance Today

PROJECT FILE MUST INCLUDE:

- ✓ Cover Page
- ✓ Index
- ✓ Content in Proper Order
- ✓ Neat Handwriting
- ✓ Diagrams/Pictures (wherever required)
- ✓ Conclusion

Enjoy your holiday!

NOTE: Everything must be done in your English Grammar Fair Notebook.

CONTACT US 9166239729

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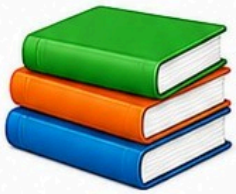
G-ROOTS GLOBAL SCHOOL

SHAPING MINDS

Class - X

HOLIDAY HOMEWORK



ਵਿਸ਼ਾ - ਪੰਜਾਬੀ

ਕਾਰਜ -

ਸਮਾਸੀ ਸ਼ਬਦ ਦੀ ਫ਼ਾਈਲ ਬਣਾਓ

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G-ROOTS GLOBAL SCHOOL

SHAPING MINDS

HOLIDAY HOMEWORK

CLASS X

MATHEMATICS

SESSION 2026–27

MATHEMATICS ASSIGNMENT

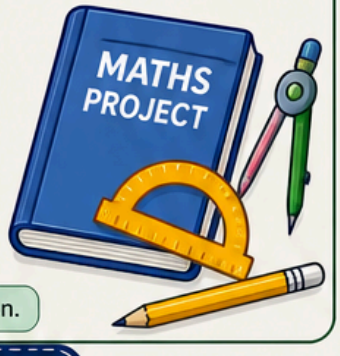
• Prepare a Project File

MATHS PROJECT GUIDELINES (CLASS X)

1. Choose a topic from the prescribed list or with the teacher's approval.
2. The project must be handwritten neatly by the student.
3. Include all required sections in the given order.
4. Use charts, graphs, models and real-life examples to make it informative and attractive.

PROJECT FILE SHOULD INCLUDE:

- Cover Page (School Name, Subject, Topic, Name, Class, Roll No., Session)
- Certificate (To be signed by the teacher)
- Acknowledgement
- Index
- Introduction
- Objective of the Study
- Main Content / Theory
- Applications in Real Life
- Observations / Findings
- Conclusion
- Bibliography



Note: Project will be assessed on Content, Presentation, Creativity and Timely Submission.

Keep Practicing, Keep Growing!

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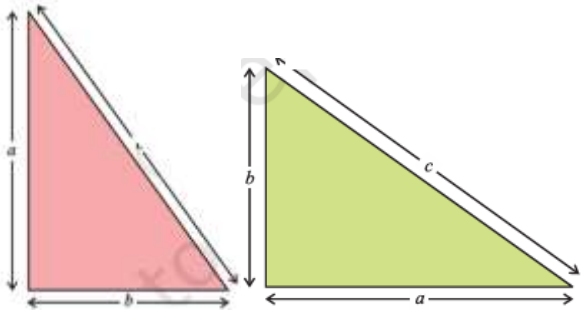
Activity 1

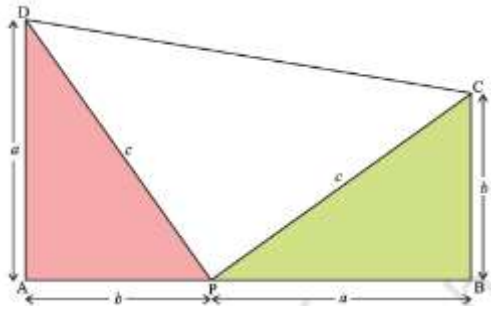
OBJECTIVE: - To verify Pythagoras Theorem.

MATERIAL REQUIRED: - Chart paper, glazed papers of different colours, geometry box, scissors, adhesive.

1. Take a glazed paper and draw a right-angled triangle whose base is 'b' units and perpendicular is 'a' units as shown in Fig. 1.
2. Take another glazed paper and draw a right-angled triangle whose base is 'a' units and perpendicular is 'b' units as shown in Fig. 2.



3. Cut-out the two triangles and paste them on a chart paper in such a way that the bases of the two triangles make a straight line as shown in Fig. 3. Name the triangles as shown in the figure.



4. Join CD.
5. ABCD is a trapezium.
6. The trapezium is divided into three triangles: APD, PBC and PCD.

DEMONSTRATION

1. ΔDPC is right angled at P.
2. Area of Δ APD = $\frac{1}{2}$ ba sq. units.

   Area of Δ PBC = $\frac{1}{2}$ ab sq. units.

   Area of Δ PCD = $\frac{1}{2}$ C^2 sq. units.
3. Area of the trapezium ABCD = ar(ΔAPD) + ar(ΔPBC) + ar(ΔPCD) So,

   $\frac{1}{2}$ (a + b) (a + b) = $\left(\frac{1}{2}ab\right) + \left(\frac{1}{2}ab\right) + \frac{1}{2}c^2$

   i.e., $(a+b)^2 = (ab + ab + c^2)$

   i.e., $a^2 + b^2 + 2ab = (ab + ab + c^2)$

   i.e., $a^2 + b^2 = c^2$

   Hence, Pythagoras theorem is verified.

OBSERVATION

By actual measurement:

AP = _____, AD = _____, DP = _____,

BP = _____, BC = _____, PC = _____,

$AD^2 + AP^2$ = _____, DP^2 = _____,

$BP^2 + BC^2$ = _____, PC^2 = _____,

Thus, $a^2 + b^2$ = _____

APPLICATION

Whenever two, out of the three sides, of a right triangle are given, the third side can be found out by using Pythagoras theorem.

Activity 2

OBJECTIVE: - To obtain formula for area of a circle experimentally.

MATERIAL REQUIRED: -Threads of different colours, scissors, cardboard, thick sheet of paper, adhesive, ruler.

METHOD OF CONSTRUCTION

1. Draw a circle of radius say r units on a thick sheet of paper, cut it out and paste it on the cardboard.
2. Cut the coloured threads of different sizes in pairs.
3. Fill up the circle by pasting one set of coloured threads of different sizes in concentric pattern so that there is no gap left in between the threads as shown in Fig. 1.
4. Arrange the other set of coloured threads starting from smallest to the largest in the pattern shown in Fig. 2. Last thread will be of same colour and same length as that of the outermost thread of the circle as shown in Fig. 2.

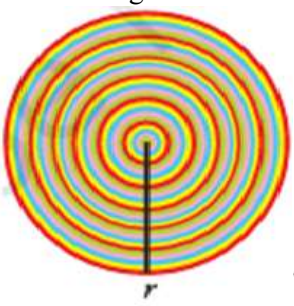


Fig. 1

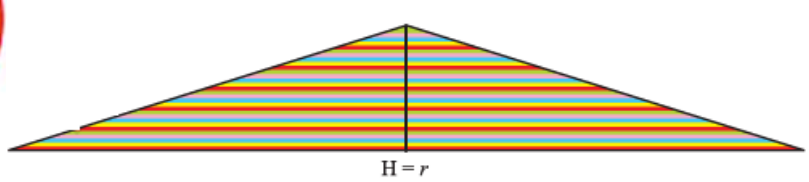


Fig. 2

DEMONSTRATION

1. Number and size of threads pasted on the circle and number and size of thread pasted in the form of triangle are the same.
2. Therefore, area covered by threads on the circle and area of triangular shaped figure formed by threads is the same.
3. Area of triangle = $\frac{1}{2}$ Base × Height
4. Base of triangle is equal to the circumference of the circle ($2\pi r$) and height of the triangle is equal to radius of circle, i.e., r.
5. Area of the circle = Area of triangle = $\frac{1}{2} \times 2\pi r \times r = \pi r^2$

OBSERVATION

On actual measurement:

1. Base of the triangle = _____units.
2. Height of triangle = _____ units (i.e., radius of the circle).
3. Area of triangle = $\frac{1}{2}$ (Base × Height) sq. units.
4. Area of circle = Area of triangle = _____.

APPLICATION

This result can be used in finding areas of flower beds of circular and semi-circular shapes and also for making circular designs and in estimating the number of circular tiles required to cover a floor.

Activity 3

OBJECTIVE: - To obtain the solution of a quadratic equation ($x^2 + 4x = 60$) by completing the square geometrically.

MATERIAL REQUIRED: - Hardboard, glazed papers, adhesive, scissors, marker, white chart paper.

METHOD OF CONSTRUCTION: -

1. Take a hardboard of a convenient size and paste a white chart paper on it.
2. Draw a square of side of length x units , on a pink glazed paper and paste it on the hardboard [see Fig. 1] . Divide it into 36 unit squares with a marker.
3. Alongwith each side of the square (outside) paste rectangles of green glazed paper of dimensions x × 1, i.e., 6 × 1 and divide each of them into unit squares with the help of a marker [see Fig. 1].
4. Draw 4 squares each of side 1 unit on a yellow glazed paper, cut them out and paste each unit square on each corner as shown in Fig. 1

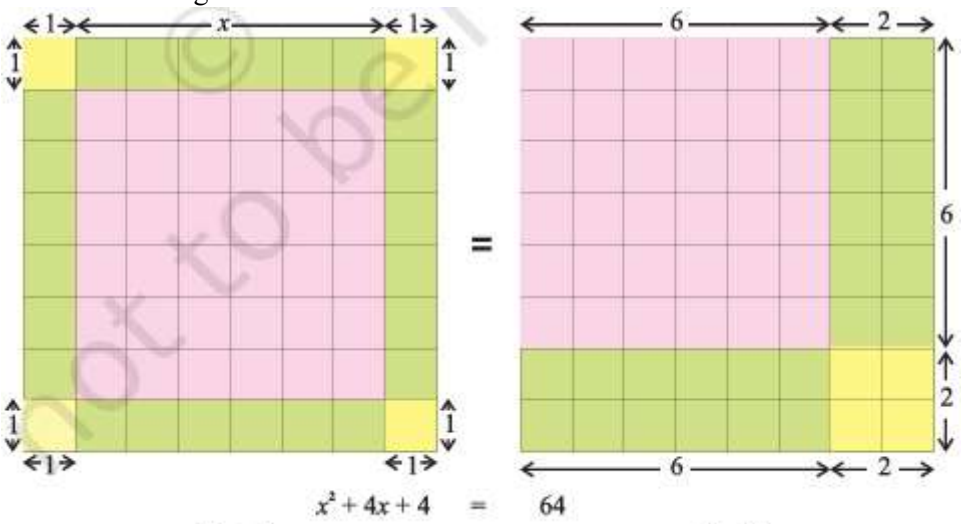


Fig. 1 Fig. 2

Draw another square of dimensions 8 × 8 and arrange the above 64 unit squares as shown in Fig. 2.

DEMONSTRATION

1. The first square represents total area $x^2 + 4x + 4$.
2. The second square represents a total of 64 (60 + 4) unit squares.

   Thus, $x^2 + 4x + 4 = 64$

   $(x + 2)^2 = (8)^2$ or $(x + 2) = \mp 8$

   i.e., $x = 6$ or $x = -10$

Since x represents the length of the square, we cannot take $x = -10$ in this case, though it is also a solution

OBSERVATION

Take various quadratic equations and make the squares as described above, solve them and obtain the solution(s).

APPLICATION

Quadratic equations are useful in understanding parabolic paths of projectiles projected in the space in any direction

Activity 4

OBJECTIVE: - To find the sum of the first n odd natural numbers.

MATERIAL REQUIRED: - Cardboard, thermocol balls, pins, pencil, ruler, adhesive, white paper.

METHOD OF CONSTRUCTION

1. Take a piece of cardboard of a convenient size and paste a white paper on it.
2. Draw a square of suitable size on it (10 cm × 10 cm).
3. Divide this square into unit squares.
4. Fix a thermocol ball in each square with the help of a pin as shown in Fig. 1.
5. Enclose the balls as shown in the figure

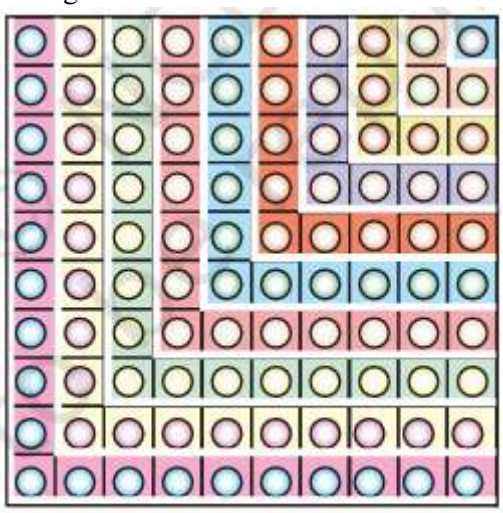


Fig. 1

DEMONSTRATION

Starting from the uppermost right corner, the number of balls in first enclosure (blue colour) = 1 ($=1^2$),
the number of balls in first 2 enclosures = 1 + 3 = 4 ($=2^2$),
the number of balls in first 3 enclosures = 1 + 3 + 5 = 9 ($=3^2$),
the number of balls in first 10 enclosures = 1 + 3 + 5 + ... + 19 = 100 ($=10^2$)
This gives the sum of first ten odd natural numbers. This result can be generalised for the sum of first n odd numbers as:

$S_n = 1 + 3 + \ldots\ldots\ldots + (2n - 1) = n^2$

OBSERVATION

For n = 4 in (1), S_n = ...
For n = 5 in (1), S_n = ...
For n = 50 in (1), S_n = ...
For n = 100 in (1), S_n = ...

APPLICATION

The activity is useful in determining formula for the sum of the first n odd natural numbers.

Note:- Create a mind map for Units 1, 2, 8, 9, 13, and 14.

G-ROOTS GLOBAL SCHOOL

SHAPING MINDS

CLASS X – SUMMER VACATION

MAP WORK – ALL SYLLABUS (SST)

SUBJECT	NAME OF THE CHAPTER	LIST OF AREAS TO BE LOCATED/ LABELED/ IDENTIFIED ON THE MAP
HISTORY	Nationalism in India	I. Congress sessions: • 1920 Calcutta • 1920 Nagpur • 1927 Madras session II. 3 Satyagraha movements: • Kheda • Champaran • Ahmedabad mill workers III. Jallianwala Bagh IV. Dandi March
GEOGRAPHY	Resources and Development	Identify Major Soil Types Water Resources Locating and Labeling: • Salal Sardar Sarovar • Bhakra Nangal Hirakund • Tehri Nagarjun Sagar • Rana Pratap Sagar Tungabhadra
AGRICULTURE	Identify:	• Major areas of Rice and Wheat • Largest/Major producer states of Sugarcane, Tea, Coffee, • Rubber, Cotton and Jute
MINERALS AND ENERGY RESOURCES	Identify: Iron Ore Mines • Mayurbhanj • Durg • Bailadila • Bellary • Kudremukh	Coal Mines • Raniganj • Bokaro • Talcher • Neyveli Oil Fields • Digboi • Naharkatia • Mumbai High • Bassien • Kalol • Ankaleshwar Locate and label: Power Plants Thermal Nuclear • Namrup • Singrauli • Ramagundam • Narora • Kakrapara • Tarapur • Kalpakkam
MANUFACTURING INDUSTRIES		• Manufacturing Industries (Locating and labeling only) • **Cotton textile Industries:** a. Mumbai, b. Indore, c. Surat, d. Kanpur, e. Coimbatore • **Iron and Steel Plants:** a. Durgapur, b. Bokaro, c. Jamshedpur, d. Bhilai, e. Vijayanagar, f. Salem • **Software technology Parks:** a. Noida, b. Gandhi-nagar, c. Mumbai, d. Pune, e. Hyderabad, f. Bengaluru, g. Chennai, h. Thiruvananthapuram
LIFELINES OF NATIONAL ECONOMY		a. Major Sea Ports • Kandla • Mumbai • Marmagao • New Mangalore • Kochi • Tuticorin • Chennai • Visakhapatnam • Paradip • Haldia b. International Airports • Amritsar (Raja Sansi–Sri Guru Ram Das ji) • Delhi (Indira Gandhi) • Mumbai (Chhatrapati Shivaji) • Chennai (Meenambakkam) • Kolkata (Netaji Subhash Chandra Bose) • Hyderabad (Rajiv Gandhi)

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CLASS X
SUMMER VACATION
PROJECT WORK (SST)

Project Work on Consumer Rights OR Social Issues OR Sustainable Development (Interdisciplinary)

Your final submission must be neatly compiled in a sturdy A4 size file folder.
Use color pens, diagrams, and images effectively.

MANDATORY STRUCTURE OF PROJECT FILE

1 COVER PAGE

- Project Title (e.g., SST Project Portfolio: Consumer Rights 2026-27)
- Your Name
- Class, Section, Roll Number
- Subject Teacher

2 INDEX PAGE

A numbered list of all project sections and map pages.

3 ACKNOWLEDGMENT PAGE

Acknowledge your teachers, family, or anyone who helped with your research.

4 INTRODUCTION / RATIONALE

A brief paragraph explaining why you chose this topic and its importance in SST.

5 MAIN CONTENT SECTIONS

(Dedicated to the 4 tasks of your chosen option). Use a clear layout with headings and bullet points.

6 DATA / FIELD WORK

Surveys, interviews, photo documentation, charts.

7 CONCLUSION / REFLECTIONS

What you learned from the project and how it changed your perspective.

8 BIBLIOGRAPHY

A list of books, websites, and data sources used for your research.

REVISE THESE CHAPTER

ECONOMICS – CHAPTER 1

Development

- Development: Meaning and importance
- Different aspects of development
- Income and other goals of development
- National Development
- Sustainable Development: Meaning and importance
- Differences between Development and Sustainable Development
- Indicators of Development (Human Development Index)

GEOGRAPHY – CHAPTERS 1, 2 & 3

Chapter 1: Resources and Development

- Types of resources
- Resource planning
- Sustainable development

Chapter 2: Forest and Wildlife Resources

- Types of forests
- Importance of forests and wildlife
- Conservation of forests and wildlife

Chapter 3: Water Resources

- Importance of water
- Sources of water
- Water scarcity
- Conservation and management of water resources

GEOGRAPHY – CHAPTER 2 (continued)

Forest and Wildlife Resources (Key Points)

- Flora and fauna in different types of forests
- Wildlife sanctuaries and national parks
- Threats to forests and wildlife

GEOGRAPHY – CHAPTER 3 (continued)

Water Resources (Key Points)

- Rainfall and its distribution in India
- Multipurpose river valley projects
- Floods and droughts
- Water conservation methods

Tips for Success: Plan your work, use beautiful handwriting, add diagrams and projetes, and submit your project on time.

Stay curious, keep learning and do your best!

G-ROOTS GLOBAL SCHOOL

SHAPING MINDS

HOLIDAY HOMEWORK

• CLASS: X • CHAPTER: 1 • SUBJECT: SCIENCE

Session 2026–27

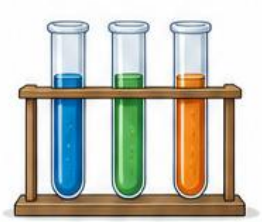
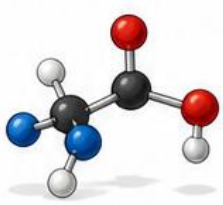
Learn Today, Lead Tomorrow

Chemical Reactions and Equations

Healthy Mind, Healthy Body, Bright Future!

INSTRUCTION – Solve all the questions in Science Practice Notebook.

1. The volume ratio of hydrogen and oxygen gases liberated during electrolysis of water is:
   (a) 1:2 (b) 2:1 (c) 1:3 (d) 4:1
2. Which of the following is a decomposition reaction?
   (a) $CaO + H_2O \rightarrow Ca(OH)_2$ (b) $2AgCl \rightarrow 2Ag + Cl_2$
   (c) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$ (d) $HCl + NaOH \rightarrow NaCl + H_2O$
3. In which case does a chemical reaction not occur?
   (a) Rusting of iron (b) Burning of coal
   (c) Melting of ice (d) Digestion of food
4. The correct balanced equation for burning of methane is:
   (a) $CH_4 + O_2 \rightarrow CO_2 + H_2O$ (b) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
   (c) $CH_4 + O_2 \rightarrow CO + H_2O$ (d) $CH_4 + 2O_2 \rightarrow CO + 2H_2O$
5. Assertion (A): Decomposition reactions are endothermic.
   Reason (R): Energy is required to break bonds.
6. Assertion (A): Silver chloride turns grey in sunlight.
   Reason (R): It decomposes into silver and chlorine.
7. Define a chemical reaction.
8. What is a balanced chemical equation?
9. State the law of conservation of mass.
10. Why is balancing of chemical equations necessary?
11. What is a combination reaction? Give one example.
12. What is a decomposition reaction? Give one example.
13. Define displacement reaction with example.
14. Define double displacement reaction with example.
15. What is a precipitation reaction? Give one example.
16. What is a redox reaction?
17. Identify oxidation and reduction in the reaction:
    $CuO + H_2 \rightarrow Cu + H_2O$
18. What happens when magnesium ribbon is burnt in air?
19. Write the balanced equation for burning of magnesium.
20. What is observed when lead nitrate is heated?


Good Food Today, Good Health Tomorrow!

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HOLIDAY HOMEWORK

• CLASS: X • CHAPTER: 1 • SUBJECT: SCIENCE

Session 2026–27

Learn Today, Lead Tomorrow

Chemical Reactions and Equations

Healthy Mind, Healthy Body, Bright Future!

INSTRUCTION – Solve all the questions in Science Practice Notebook.

21. Write the balanced equation for decomposition of lead nitrate.
22. What happens when silver bromide is exposed to sunlight?
23. Write the equation for decomposition of silver bromide.
24. What happens when zinc reacts with copper sulphate solution?
25. Write the balanced equation for the above reaction.
26. What happens when iron nails are dipped in copper sulphate solution?
27. What is corrosion? Give one example.
28. What is rancidity? How can it be prevented?
29. What happens during electrolysis of water?
30. Name the gases collected at anode and cathode during electrolysis of water.
31. What is the ratio of gases obtained during electrolysis of water?
32. Why is dilute sulphuric acid added during electrolysis of water?
33. Write the balanced equation for electrolysis of water.
34. What happens when calcium carbonate is heated?
35. Write the equation for thermal decomposition of calcium carbonate.
36. What happens when quicklime reacts with water?
37. Write the balanced equation for reaction of CaO with water.
38. What is exothermic reaction? Give one example.
39. What is endothermic reaction? Give one example.
40. Explain why respiration is an exothermic reaction.

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