

OUR INDIA INTERNATIONAL SCHOOL

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SUMMER VACATION HOMEWORK

Grade X

Dear Students,

Summer vacation is a time to relax, enjoy, and also learn new things in a fun way. Your holiday homework has been designed to improve your creativity, thinking skills, handwriting, reading habits, and subject knowledge.

Please follow these instructions carefully while completing your work:

General Instructions

1. Complete all the work neatly and sincerely.
2. Maintain separate notebooks/files wherever instructed.
3. Write in clear and legible handwriting.
4. Use colours, charts, and pictures to make your work attractive.
5. Complete the work on your own. Take guidance from parents only when needed.
6. Submit all homework on time after the vacation.
7. Read instructions carefully before starting each activity.
8. Keep your notebooks clean and well-covered.
9. Practice reading and writing daily to improve your language skills.
10. Revise the chapters regularly for oral and written assessments.

Special Note for Students

- Spend some time every day reading books and newspapers.
- Help your parents at home and learn good habits.
- Drink plenty of water and stay healthy.
- Enjoy your holidays while learning something new every day.

Parents' Cooperation

Dear Parents,

Kindly encourage your child to complete the holiday homework independently. Your support and guidance will help them develop confidence, responsibility, and creativity.

HINDI

पाठ्य पुस्तक अध्ययन

अपनी पाठ्य पुस्तक क्षिततज में से ककहीं पाँँींच पाठों का सारींश अच्छी तर से तैयार करो।

रचनात्मक लेखन

तनम्र विषयों पर 100 से 150 शब्दों में अनुच्छेद लेखन ललखो-

ग्लोबल िालमिंग , ररत क्ाींतत

पत र लेखन-

कोई भी एक औपचारक और अनौपचारक पत्र ललखते ुए उनके आंतर को स्पष्ट कीजए।

संवाद लेखन- "ऑनलाइन पढाई के लाभ और ातन" इस विषय पर दो लमत्रों के बीच सींिाद लेखन को ललखो।

पररयोजना कायय-

"हींदह में शब्द भेद" की पररभाषा और उनके प्रकार का एक चाटट बनाइए।

अथवा

"पेड़ पौधों के म्त्ि" विषय पर चाटट बनाकर उनके विषय में पाँँींच िाक्य ललखो

ENGLISH

General Instructions

Complete the work neatly in a separate holiday homework notebook.

Use blue/black pen only.

Write all answers in your own words.

Revise grammar rules regularly.

Learn difficult words and their meanings from all chapters and poems.

Section A – English Language Foundation Course

1. Sentence

(a) Define a Sentence.

(b) Write five examples each of:

Declarative Sentences

Interrogative Sentences

Imperative Sentences

Exclamatory Sentences

(c) Identify the type of sentence:

What a wonderful idea it is!

Please switch off the fan.

Did you complete your homework?

The children are playing in the garden.

Never waste your time.

2. Phrase and Clause

(a) Define:

Phrase

Clause

(b) Differentiate between Phrase and Clause with five examples.

(c) Underline the phrases in the following sentences:

The boy in the blue shirt is my brother.

We sat under the shady tree.

She completed the work with honesty.

The man near the gate is a teacher.

They walked through the forest.

(d) Underline the clauses in the following sentences:

I know that he is honest.

When the rain stopped, we went outside.

She smiled because she was happy.

If you work hard, you will succeed.

The girl who won the prize is my cousin.

3. Verb "To Be"

(a) Write all forms of the verb "To Be".

am

is

are

was

were

been

being

(b) Fill in the blanks with correct forms of "To Be":

She ___ my best friend.

They ___ playing cricket.

I ___ happy yesterday.

We ___ going to school tomorrow.

The books ___ on the table.

(c) Make ten sentences using different forms of "To Be".

Section B – Literature

Chapter: A Letter to God by Gregorio López y Fuentes

Activities

Write the summary of the chapter in about 150 words.

Write a character sketch of Lencho.

Answer the following questions:

Why was Lencho angry after receiving the letter?

Why did Lencho write a letter to God?

Why did the postmaster help Lencho?

Find and write meanings of 20 difficult words from the chapter.

Imagine you are the postmaster. Write a diary entry about Lencho's letter.

Chapter: A Long Walk to Freedom by Nelson Mandela

Activities

Write the summary of the chapter in about 150 words.

Write a short note on Nelson Mandela.

Answer the following questions:

What ideals did Mandela set for the future of South Africa?

What does Mandela mean by courage?

What were the twin obligations mentioned by Mandela?

Write meanings of 20 difficult words from the chapter.

Write five values that students can learn from Mandela's life.

Section C – Poetry

Poem: Fire and Ice by Robert Frost

Activities

Write the central idea of the poem.

Explain the poem stanza-wise in simple English.

Write the rhyme scheme of the poem.

Find meanings of 15 difficult words.

What do "Fire" and "Ice" symbolize in the poem?

Poem: A Tiger in the Zoo by Leslie Norris

Activities

Write the central idea of the poem.

Explain each stanza in simple English.

Write the rhyme scheme of the poem.

Find meanings of 15 difficult words.

Compare the tiger in the zoo with the tiger in the jungle.

Holiday Practice Task

Read an English newspaper daily for 15 minutes.

Learn five new words every day with meanings and sentences.

Practice speaking in English with friends and family.

Read one English storybook during the holidays.

Teacher's Note

"Learning English becomes easy when you read, write, speak and practice regularly."

Happy Holidays and Happy Learning!

SST

Students are instructed to complete the following assignments neatly in their notebooks. Use maps, charts, diagrams, and pictures wherever required.

Subject	Assignment
History	Prepare a timeline of important events related to Nationalism in Europe. Write short notes on Giuseppe Mazzini, Otto von Bismarck, and the unification of Germany and Italy.
Civics	Write the meaning and importance of Power Sharing and Federalism in India with suitable examples. Also explain the difference between unitary and federal governments.
Geography	Draw the political map of India and mark neighboring countries, major rivers, and important resources.
Economics	Write short notes on different sectors of the Indian economy and explain their importance with examples.

Note: Complete all assignments neatly and submit after the holidays.

PHYSICS

General Instructions

1. Complete all work neatly in a separate Physics notebook/file.
2. Draw all diagrams with pencil and ruler.
3. Learn all formulas and definitions.
4. Submit the homework after summer vacation.

Section A – Very Short Answer Questions

1. Define reflection of light.
2. What is the principal focus of a concave mirror?
3. Define radius of curvature.
4. State the laws of reflection.
5. What is refraction of light?
6. Define refractive index.
7. Name the mirror used in vehicles as rear-view mirrors.
8. What happens to light when it travels from rarer to denser medium?
9. Define power of a lens.
10. Write the SI unit of power of lens.

Section B – Short Answer Questions

1. Differentiate between real image and virtual image.
2. Draw ray diagrams for image formation by concave mirror and convex lens.
3. Why does a pencil appear bent when partially immersed in water?
4. Explain the relation between focal length and radius of curvature.
5. State the sign convention for spherical mirrors.

Section C – Numerical Problems

1. An object is placed 20 cm in front of a concave mirror of focal length 15 cm. Find the image distance.
2. A convex lens has focal length 25 cm. Find its power.
3. An image is formed at 30 cm by a concave mirror when object is placed at 60 cm. Find focal length.
4. Find the refractive index of a medium if speed of light in medium is 2×10^8 m/s.
5. A lens has power -2D. Find its focal length.

Section D – Diagram Practice

1. Structure of human eye
2. Ray diagram of concave mirror
3. Ray diagram of convex mirror
4. Refraction through glass slab
5. Image formation by convex lens

Section E – Activity Work

1. Observe any five objects around your home and identify whether they produce regular reflection or diffused reflection.
2. Make a simple periscope using cardboard and mirrors and write materials used, procedure and conclusion.

Section F – Case Study / HOTS Questions

1. Why are convex mirrors used as rear-view mirrors in vehicles?
2. A student is unable to read the blackboard clearly from backbench. Which type of lens may help him? Explain.
3. Why do stars appear twinkling at night?
4. Explain why diamond shines brightly.

Learning Work

1. Learn and write Mirror Formula.
2. Learn and write Lens Formula.
3. Learn and write Magnification Formula.
4. Learn laws of reflection and refraction.

Project Work

1. Prepare a colorful chart/model on Human Eye, Defects of Vision, Reflection of Light, Refraction through Prism.

CHEMISTRY

Section A: Short Answer Type Questions

- Q1.** Why should a magnesium ribbon be cleaned with sandpaper before burning it in air? Name the compound formed after burning. *[2 Marks]*
- Q2.** Write a balanced chemical equation for the reaction between sodium sulphate and barium chloride solutions. Identify the type of reaction. *[2 Marks]*
- Q3.** What happens chemically when quicklime (calcium oxide) is added to water? Write the equation and mention whether it is exothermic or endothermic. *[2 Marks]*
- Q4.** A shiny brown-colored element 'X' on heating in air becomes black in color. Name the element 'X' and the black-colored compound formed. *[2 Marks]*
- Q5.** Why do we apply paint on iron articles? Explain the chemical phenomenon prevented by painting. *[2 Marks]*
- Q6.** Oil and fat-containing food items are flushed with nitrogen gas during packaging. Explain the reason behind this practice. *[2 Marks]*
- Q7.** What is observed when a strip of zinc is placed in a copper sulphate solution? Write the chemical equation for the reaction. *[2 Marks]*
- Q8.** Differentiate between an exothermic reaction and an endothermic reaction, providing one balanced chemical equation for each. *[3 Marks]*
- Q9.** What is a precipitation reaction? Explain by giving a suitable example with its chemical equation. *[3 Marks]*
- Q10.** Why is respiration considered an exothermic reaction? Explain the process with its biochemical equation. *[3 Marks]*

Section B: Long & Application-Based Questions

- Q11.** A student took 2g of lead nitrate powder in a boiling tube and heated it over a flame:
- What changes will be observed regarding the color of the powder and the emissions?
 - Write a fully balanced chemical equation for this reaction.
 - What type of chemical reaction is this? *[5 Marks]*
- Q12.** Explain the process of electrolysis of water with the help of a neat, labeled setup diagram. Why is the volume of gas collected at one electrode double the volume collected at the other? Identify both gases. *[5 Marks]*
- Q13.** Define a redox reaction. In the following chemical reactions, identify the substances that are oxidized, reduced, the oxidizing agent, and the reducing agent:
- $\text{CuO (s)} + \text{H}_2 \text{(g)} \xrightarrow{\text{heat}} \text{Cu (s)} + \text{H}_2\text{O (l)}$
 - $\text{MnO}_2 \text{(s)} + 4\text{HCl (aq)} \rightarrow \text{MnCl}_2 \text{(aq)} + 2\text{H}_2\text{O (l)} + \text{Cl}_2 \text{(g)}$ *[5 Marks]*

Q14. Balance the following skeleton chemical equations completely:

- a) $\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{H}_2\text{O}$
- b) $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
- c) $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$
- d) $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + \text{HCl}$
- e) $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$ [5 Marks]

Q15. Give reasons for the following occurrences:

- a) White silver chloride turns grey when kept in sunlight.
- b) Ferrous sulphate crystals change color from light green to white and then brown upon heating.
- c) Blue copper sulphate crystals turn white on heating. [5 Marks]

Section C: Case-Based & Analytical Questions

Q16. Case Study: When potassium iodide solution is added to a test tube containing lead nitrate solution, a striking yellow substance forms at the bottom of the tube.

- a) Name the yellow substance formed.
- b) Write the balanced chemical equation for this reaction.
- c) Is this a double displacement reaction? Justify. [4 Marks]

Q17. What is rancidity? List three distinct practical methods used in daily life or food industries to prevent the rancidity of oily items. [3 Marks]

Q18. An organic substance 'A' is an essential constituent of wine and beer. Oxidation of 'A' yields an acid 'B' found in vinegar. Identify 'A' and 'B', and state whether this oxidation represents a chemical combination or a redox breakdown. [4 Marks]

Q19. A metal smith noticed that old copper vessels in his workshop had developed a dull green coating over time, while silver ornaments had turned completely black.

- a) Name the chemical terms given to these phenomena.
- b) Give the chemical formulas of the green coating on copper and the black layer on silver. [4 Marks]

Q20. Design a small, safe home activity or observation log to demonstrate a chemical change using easily available materials (e.g., lemon juice/vinegar with baking soda, or rusting of an iron nail). Document your observations, including color changes, gas evolution, or temperature variations, in a short report. [5 Marks]

BIOLOGY

1. Project work

Impact of lifestyle on human health .

2. Write short notes on the following topics :

- A) Nutrition in humans.
 - B) Transportation of blood in humans.
 - C) Role of xylem and phloem in plants.
- ### 3) Draw and label the following diagrams:
- A) Human digestive system.
 - B) Human excretory system.
 - C) Structure of the nephron.

MATHEMATICS

PART A: CHAPTER 1 – REAL NUMBERS

- Q1.** Express 140 and 156 as a product of their prime factors.
- Q2.** Find the LCM and HCF of 26 and 91, and verify that $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$.
- Q3.** Find the HCF and LCM of 12, 15, and 21 by applying the prime factorization method.
- Q4.** Given that $\text{HCF}(306, 657) = 9$, find the LCM of 306 and 657.
- Q5.** Check whether 6^n can end with the digit 0 for any natural number n .
- Q6.** Explain why $7 \times 11 \times 13 + 13$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ are composite numbers.
- Q7.** There is a circular path around a sports field. Sonia takes 18 minutes to drive one round of the field, while Ravi takes 12 minutes for the same. Suppose they both start at the same point and at the same time, and go in the same direction. After how many minutes will they meet again at the starting point?
- Q8.** Prove that $\sqrt{5}$ is an irrational number.
- Q9.** Prove that $3 + 2\sqrt{5}$ is irrational.
- Q10.** Prove that the following numbers are irrationals:
(i) $1/\sqrt{2}$
(ii) $7\sqrt{5}$
(iii) $6 + \sqrt{2}$

PART B: CHAPTER 2 – POLYNOMIALS

- Q11.** Find the zeroes of the quadratic polynomial $x^2 - 2x - 8$, and verify the relationship between the zeroes and the coefficients.
- Q12.** Find the zeroes of the quadratic polynomial $4x^2 - 4x + 1$, and verify the relationship between the zeroes and the coefficients.
- Q13.** Find the zeroes of the quadratic polynomial $6x^2 - 3 - 7x$, and verify the relationship between the zeroes and the coefficients.
- Q14.** Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively:
(i) $1/4, -1$
(ii) $\sqrt{2}, 1/3$
- Q15.** Find a quadratic polynomial whose sum and product of zeroes are 0 and $\sqrt{5}$ respectively. Also, find its zeroes.
- Q16.** If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - 5x + 4$, find the value of $(1/\alpha) + (1/\beta) - 2\alpha\beta$.

Q17. Find a quadratic polynomial whose zeroes are reciprocals of the zeroes of the polynomial $f(x) = ax^2 + bx + c$ ($a \neq 0$).

Q18. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then find the value of k .

Q19. If the sum of the zeroes of the quadratic polynomial $kx^2 + 2x + 3k$ is equal to their product, find the value of k .

Q20. Form a quadratic polynomial whose zeroes are $(2 + \sqrt{3})$ and $(2 - \sqrt{3})$.

ARTIFICIAL INTELLIGENCE

S.No.	Chapter's Name	Activities
1	Ability to Work Independently	Reading chapter, MCQ, fill in the blanks, Answer the following questions.
2	Managing Files and Folders	Reading Chapter, MCQ, Answer the following questions
3	Care and Maintenance of a Computer, Entrepreneur and Entrepreneurship	Reading Chapter, MCQ, Answer the Following Questions C Fill in the Blanks
4	Sustainable Development	Reading the Chapter