

SAINIK SCHOOL GOAPLGANJ
SUMMER VACATION ASSIGNMENT: 2025-26

CLASS XI

ENGLISH

1. Collect at least five words a day from English newspaper and write the meaning, synonyms and antonyms of the collected words.
2. Choose any 04 lessons from your textbook (Hornbill/Snapshots) and write their summary.
3. Read a novel of your choice and write its book review in your own words.
4. Write five formal letters to different heads by devising various topics related to your society and environment. (Eg. To the Principal, the DM, the Editor of a newspaper, the Manager, the Chif Medical Officer of your district)
5. Design posters (as per CBSE format) on any five topics of your choice to develop awareness among the people.
6. In today's digital world, conversations have turned into emojis, and meaningful dialogue is often replaced by short, instant messages. Face-to-face interactions are becoming rare, and social media is redefining relationships. Reflect on how technology has impacted human communication — both positively and negatively.

Has the ease of texting, tweeting, and posting diminished the depth of our interactions? Are we losing the ability to truly listen and express ourselves?

Write an **article** in about 300 – 350 words on the topic: **“From Conversations to Clicks: Is Technology Killing the Art of Communication?”**

Your article should:

- Present your opinion clearly and logically
- Discuss both the advantages and drawbacks of technology in communication
- Provide real-life examples or observations
- Conclude with your personal viewpoint and suggestions

MATHEMATICS

- **Permutation and Combination** Solve problems based on this topic from Ex7.2, Ex7.3, Ex7.4 from text book
- **Limit and Derivatives** Solve problems based on this topic from 13.1, Ex13.2, Miscellaneous **Chapter No 13** from text book.
- **Binomial** Solve problems based on this topic from Ex8.1, Ex8.2, Ex8.3. **Miscellaneous from text book**
- **Probability** Solve problems based on this topic from Ex16.2, Ex16.3, **Miscellaneous 16 from text book**

PROJECTS:

Statistics and Probability:

Conduct a survey within your school on a topic of interest (like favorite foods, leisure activities, etc.) and analyze the data using statistical methods. Study a real-life scenario involving probability, such as the probability of different outcomes in a game or sports event.

Geometry:

Investigate the properties of a particular geometric shape, such as triangles, circles, or polygons.

Explore the concept of symmetry in everyday objects or patterns.

Trigonometry:

Create a project demonstrating the applications of trigonometry in real life, such as measuring heights or distances using trigonometric ratios.

Investigate the properties of trigonometric functions and their graphs.

Explore the concept of rates of change by analyzing real-world phenomena, such as population growth or the motion of objects.

Integrals

Investigate the area under curves using integration and its applications.

PHYSICS

You are required to prepare a technical report formally written, including an abstract, some theoretical discussion, experimental set up, observation and data collected, analysis and discussion of the result, conclusion the project can be a theoretical one .

You will be assessed on:

- a. Conceptual clarity /understanding
- b. Computations (if any)
- c. Presentation (No extra credit shall be given for type-written material / decorative cover.

You can work on topic of your choice from the list given below

1. Role of physics in technology
2. Application of vectors and scalar quantities and its significant.
3. Rocket propulsion and application of Newton's Law
4. Simple Harmonic motion
5. Friction advantages, disadvantages in day to day life its law and application.
6. Bernoulli's principle and its application.

CHEMISTRY

1. Discuss the importance of Chemistry in modern life.
2. Solve all the numerical problems from the chapter 'Some Basic Concepts Of Chemistry' of the textbook.
3. Explain all the laws of Chemical Combinations from the chapter.
4. Write short notes on Mole Concept.
5. Explain Empirical Formula, Molecular Formula and Limiting Reagent.
6. Describe Molality, Molarity and Mole Fraction.
7. Discuss all the points of Dalton's Atomic Theory and its drawbacks.
8. What is average Atomic Mass? Explain it giving suitable examples.
9. Explain Formula Mass giving any four examples.
10. Describe Discharge tube experiment and on this basis explain the properties of cathode ray and anode ray particles.
11. What do you mean by isotopes, isobars and isotones ? Explain with the help of examples.
12. Solve all the numerical problems of the chapter structure of atoms.
13. What are quantum numbers? What information we can get from these ?

PROJECT

1. Project on Discovery of electron.
2. Project to describe the concentrations of solutions quantitatively

BIOLOGY (Only for Bio Section)

INVESTIGATORY PROJECTS LIST

Select a topic and make an investigatory projects in following given topic. Each cadet has to make one project compulsory. The project must contain following parameters. These parameters may be applicable in the projects; it may change project to project.

- Cover Page
- Acknowledgement
- Contents
 - Introduction
 - What is.....?
 - Types of
 - Causes of
 - Effects of
 - History of
 - Diagnosis of
 - Conclusion
 - Bibliography

INVESTIGATORY PROJECTS TOPICS	SCHOOL NO.
1. Study of effect of manures and fertilizers on plant	1321,1350
2. To study the plant hormone and its effects on plant..	1325,1351
3. Study of effect of antibiotics on micro-organisms.	1326,1353
4. To study of cell cycle and its effects on cancer.	1328,1354
5. Study of photosynthesis in oceans	1329,1355
6. Study of the effect of gibberellins on seed germination and shoot elongation.	1333,1357
7. Study of cell division	1335,1358
8. To study of dispersal of seeds by various agencies.	1336,1363
9. Comparative study of various class of algae on the basis of chlorophyll	1337,1370
10. To Study the adaptability of frog to drastic environmental changes such as (1) Absence of plant and animal food	1338,1371

(2) Cold condition (3) High concentration of carbon dioxide .	
11. Study of heart diseases	1339,1380
12. Study of locomotion and role of different fins in fishes.	1341,1470
13. Study of natural defense mechanism of human	1345
14. Study of deficiency disease	1346
15. Study of cancer in human	1349

COMPUTER SCIENCE (For Computer Section Only)

1.
 - a) Draw the logic gate symbols for AND, OR, NOT, NAND, and NOR gates.
 - b) Write the Boolean expression implemented by the following logic circuit:
(Imagine a circuit with inputs A and B. A goes through a NOT gate. The output of the NOT gate and B are inputs to an AND gate. The output of this AND gate is the final output X.)
 - c) Design a logic circuit using only NAND gates that implements the Boolean function: $Y=A+B$
2. Prove that NAND and NOR gates are universal gates.
3. Do as directed :
 - a) Convert the Decimal number 781 to its Binary equivalent.
 - b) Convert Binary number 101101.001 to its decimal equivalent.
 - c) Convert Octal number 321.7 into its Binary equivalent.
4. Do as directed :
 - a) Convert the Hexadecimal number 3BC into its Binary equivalent
 - b) Convert the Binary number 10011010.010101 to its Hexadecimal equivalent.
 - c) Convert the Decimal number 345 into Octal number.
5. Do as directed
 - a) Perform the binary addition of $(1011)_2$ and $(0110)_2$.
 - b) Find the 1's complement of the binary number $(101100)_2$.
 - c) Find the 2's complement of the binary number $(011011)_2$.
 Explain why 2's complement is often used to represent negative numbers in computers.
 - d) Using 2's complement representation (with 8 bits), perform the subtraction of $(5)_{10}$ from $(12)_{10}$
