



SAINIK SCHOOL REWARI
SUMMER VACATION HOMEWORK (2023-24)
CLASS-XII

ENGLISH

1. Comment upon the theme of “ Linguistic Chauvinism” as presented in the chapter “ The Last Lesson” in 120-150 words. Give specific textual instances.
2. Compare and contrast the plight of Saheb and Mukesh from “ Lost Spring: Stories of Stolen Childhood”.
3. Write five new words of your choice daily in your notebook, with their meaning in English and write down a sentence on your own with them. Maintain record of words date-wise without fail.
4. Read at least two works of fiction/non fiction of your choice and write their review.
5. Write five letters to the editor (giving suggestions or opinion on issues of public interest)
6. Write the report for function, event or incident (descriptive and analytical in nature) for the school magazine and the newspaper (three each).
7. Write ten Notice for different events/functions.

MATHEMATICS

1. Solve the 05 question papers of UPSC NDA OF MATHEMATICS of following years:-
 - (a) 2022 I
 - (b) 2022 II
 - (c) 2021 I
 - (d) 2021 II
 - (e) 2023 I
2. Learn formulae of Differentiation, Integration and Properties of Matrices and Determinants & Trigonometric functions. Also make a pocket Diary on formula of above topics.
3. Solve the following chapters of NCERT and make mind map of following chapters:-
 - (i) Relations and Functions
 - (ii) Inverse Trigonometric Functions
 - (iii) Matrices
 - (iv) Determinants
 - (v) Continuity and Differentiability
 - (vi) Applications of Derivatives

- Project on finding the Coordinate of different points identified in your study room using the concept of Three-dimensional geometry and also find distance between the identified points.

Do the following activities in an activity file

- To sketch the graph of a^x and $\log_a x$, $a > 0, a \neq 1$ and to examine that they are mirror images of each other.
- To verify that the relation R on the set L of all lines in a plane defined by $R = \{(l, m) : l \perp m\}$ is not an equivalence relation.
- To find analytically the limit of a function $f(x)$ at $x = c$ and also check the continuity of the function at that point. Consider the function:

$$F(x) = \begin{cases} \frac{x^2-4}{x-2}, & x \neq 2 \\ 6, & x = 2 \end{cases} \quad \text{Check its continuity at } x=2$$

PHYSICS

- Solve the Physics questions of 05 question papers of NDA of following years:-
 - 2022 I
 - 2022 II
 - 2021 I
 - 2021 II
 - 2023 I
- Draw Concept maps of the first three chapters.
- Solve NCERT examples and Exercise of the first three chapters.
- Write about the Nobel Prize winners in the field of Physics and their contribution of last two years.
- Do previous years questions of first three chapters.
- Write five applications of Electrostatics in real life situations.
- Solve 30 MCQ's each of first three chapters.

CHEMISTRY

- Solve NCERT questions of unit 1 and unit 2 in notebook.
- Learn and write all the definitions, terms, mathematical derivation of unit 1, 2 and 3.
- Solve Chemistry questions of previous 05 years NDA question papers in notebook.
- Prepare mind maps of following NDA chemistry topics:
 - Oxidation and Reduction
 - Carbon— different forms
 - Physical and Chemical Changes
 - Fertilisers—Natural and Artificial

5. Extract questions from Cbse board paper of last 3 years of chapter 1,2 and 3 and do it in your notebook.
6. Prepare a report on the following topic : Nobel Laureates in Chemistry of last two years : their life and works.
7. Write Chemical composition of any five materials used in our day to day life example – soaps, paste, paints, cold drinks, honey etc.

BIOLOGY

1. Prepare a project on any one topic
 - (a) Sexually Transmitted Diseases
 - (b) Economic importance of Microbes
 - (c) Biodiversity Conservation
 - (d) Test tube Baby /Various IVF Techniques
 - (e) Application of recombinant DNA Technology/Biotechnology
2. Solve all Questions of NCERT Textbook Exercise from Chapter-1,2,3 and 7.
3. Write down important terms and definitions of Chapter 1,2,3 and 7.
4. Prepare a list of Biologists and their contribution , who got Noble price in Medicine in last five years on A4 size paper.
5. Solve UPSC (NDA) questions of Biology asked in last ten years in the notebook.
6. Solve all the questions asked in NEET Exam-2023 from Chapter 1,2,3 and 7 in the Notebook.
7. Prepare a chart on A4 Paper about various Vitamins and Hormones ,their role and related deficiency diseases or disorder.

COMPUTER SCIENCE

1. Suppose a one dimension array of integers is declared with SIZE elements. A user provides an initial index, a step (either positive or negative, step >-SIZE), and a count greater than zero, from keyboard. Let these variables be named array, index, stride and count. If the array was : (1,2,3,4,5,6,7,8) and index =6, step=1 and count =4, the application should calculate the sum as 7+8+1+2 (wrapping around to the beginning of the array). If index =1 step=-2 and count =3 the application should calculate 2+8+6 (wrapping around to the end of the array).

Notice that step determines how many indices are to be stepped and sign determines the direction. That is step as +3 means skip 3 indices in forward direction step as -2 means skip 2 indices in backward direction.

Write a snippet of python that makes these calculation correctly, and does not use an if statement for the sum calculation part.

2. What is monkey patching and is it ever a good idea?
3. What is the difference between deep and shallow copy?
4. What are the built-in types of python?

5. Python and multi-threading. Is it a good idea? List some ways to get some Python code to run in a parallel way.

6. Prepare the Practical File of A4 size with plastic cover folder. Practical file should have following:-

- Must have minimum 20 programs from the following topics
 - Function
 - File Handling
 - Queue
- Cover Page with Title
- Index Page
- Use A4 size papers.
- Use one side ruled or un-ruled paper

7. What is pickling and Unpickling ?